

Industry and CAA to Confer On Personal Plane Research

Arrangements have been made for an early conference between industry engineers and representatives of the Civil Aeronautics Administration, the National Advisory Committee for Aeronautics, and the Army and Navy to discuss proposals for personal plane development, as suggested by Wm. A. M. Burden, Assistant Secretary of Commerce, in a recent speech.

Mr. Burden, speaking at an Institute of Aeronautical Sciences meeting in New York, January 30, called attention to the badly needed improvements in personal planes to make them a large-market product. He suggested that the conference be held to determine what gaps exist in the present research and development programs, and to decide if they can be filled by the CAA through contracts with industry, or by Army and Navy development contracts.

Design Aid Lacking—The government has done less in the personal aircraft design field than in any other phase of personal flying, Mr. Burden pointed out. In its entire history it has spent only \$275,000 on the development of personal type aircraft, while to date it has spent \$66,550,842 on peacetime civil pilot training, and has tentatively allocated \$33,414,258 on building class 1, 2 and 3 airports, largely for personal flyers.

Calling this an unbalanced program, Mr. Burden expressed the belief that the government should aggressively assist the industry in the development of a better product, just as it is assisting financially the development of air transport.

"The air transport industry was not built up without substantial government assistance in the form of mail contracts and military help in the development of new types of transports," he said. "If it had been left to its own devices it would be ten years behind the point where it is today."

Must Improve Plane—Rapid improvement of personal aircraft design with the industry, the National Advisory Committee for Aeronautics and the CAA combining their efforts in an energetic development program, was one of the conditions specified in reaching the 400,000 civil plane goal by 1955, Mr. Burden declared.

"A program for basic research on personal plane problems by the NACA has been agreed upon between the industry and the government and is being put into effect as rapidly as possible, but it will obviously be some years hence before the fruits of such research can be translated into new designs," Mr. Burden continued.

"The CAA large-scale program for personal aircraft development through contracts with industry

was not approved in its entirety by the Bureau of the Budget and thus was not submitted to the Congress although a small amount was allocated for castoring landing gear development."

While industry has had an active new model development program underway, Mr. Burden expressed the opinion that the amount it can spend on development in the near future probably will be limited by the sales outlook.

Production Falling Off—"There are ample signs that the production peak has been reached for the time being, at least," he said. "Production of civil

(See *Plane Research*, page 26)

Plane Ownership Recording Fee Reduced by CAA

A 20 percent reduction in the fee for recording ownership of aircraft and aircraft liens from the present \$5.00 to \$4.00, effective May 1, has been announced by T. P. Wright, Administrator of Civil Aeronautics Administration.

The reduction of the fee for these services, which has been in effect since August 15, is in accordance with the pledge made by the Administrator that if a study by CAA of these services during the first six months of its operation warrants a reduction, it would be made.

The charges were instituted under a Congressional mandate to CAA that it defray the cost of service operations through service fees wherever possible. Preliminary estimates indicated that a fee of \$5.00 would be necessary to cover the cost of the aircraft recording service, but analysis of actual operating experience has shown that \$4.00 will be sufficient.

The policy of continued study of fees charged, with a view toward their reduction to the lowest possible rate sufficient to defray operating costs at the end of each six-month period, will be maintained, the Administrator said.

Three-year Plan Lists 4431 Ports As Nation's Need

This year's survey of the nation's airport needs, issued last month by the Civil Aeronautics Administration, lists 4431 airports which the CAA believes should be built or improved during the next three years.

From this list, issued as the 1947 National Airport Plan, the CAA will select the projects to be included in the construction program for the fiscal year 1948, depending on the amount of funds appropriated by Congress and the relative urgency of each project.

The construction program for the fiscal year 1947, calling for 800 new or improved airports, was announced January 10.

The National Airport Plan outlines the pattern to be followed in developing a nation-wide system of airports, rather than the final programming of construction projects. Annual revision is required under the Federal-aid Airport Act.

417 Large Airports—The current Plan specifies the need for 417 large airports (those with paved runways of 4500 feet or longer at sea level), 3850 smaller airports, and 164 seaplane bases.

Although no attempt has been made to show cost of individual projects, the CAA estimates that the 417 large airports would require a total of \$435,000,000 in federal and sponsors' funds, while the 3850 smaller airports would cost \$548,800,000—approximately 45 percent of the money for the larger airports, and 55 percent for the smaller airports. Estimated cost of the seaplane bases would be \$2,000,000.

Of the 4431 projects, 2550 are entirely new airports, while 1881 are existing public airports requiring improvement.

Out of the 417 large-airport projects, only 14 are new. The remaining 403 are existing airports to be improved. A greater proportion of the smaller airports would be new construction. In the Class 1 category (unpaved landing strips 1800 to 2700 feet in length) 1708 new fields are proposed, with 507 sites listed for improvement.

Airport locations listed in the Plan have been chosen with three factors in mind: (1) airports required to accommodate air traffic generated in the community in which they are located; (2) airports at intervals along natural routes of air travel; (3) airports located at places people want to reach.

Air Carrier Statistics—A Note of Explanation

This issue of the CAA Journal does not include the statistical tables on domestic and territorial air carrier operations which form a regular feature.

The Civil Aeronautics Board, source of the statistical material, recently revised the procedures under which it receives reports from the operating companies. To be specific, a new form (CAB 41) replaces the old forms (CAB 2380 and CAB 2780).

Also, the period within which reports are to be filed has been extended. That period now is 30 days—instead of 15 days—following the close of the month for which operations are reported.

This means that the "deadline" for reporting January air carrier operations was March 1, instead of February 15, with the result that the material was not available at the time of going to press.

With the April 15 issue, the JOURNAL will resume publication of the statistics on air carrier operations. In the future, totals for each operator will be shown, but the breakdown by routes will be discontinued. We hope that the new reporting procedure will make possible the publication of operations data for all operators in each issue, thus increasing this standard feature's value to readers.

Plane Research

(Continued from page 25)

aircraft has been falling off rapidly from a peak of 4698 in August to 1909 in December, and backlogs of orders have been greatly reduced. Several lightplane manufacturers have ceased production entirely or gone out of business."

He expressed the opinion that there is a widespread feeling that the decline, in part at least, is due to a feeling on the part of the customers that many of the personal aircraft of today do not meet their requirements.

What Small Plane Needs—To make the personal plane more useful, particularly for 50-100 mile trips, Mr. Burden called for more speed in the conventional plane, and greater speed range, reduced costs, simpler controls, and continued development of unconventional planes such as the roadable plane and helicopter.

Pointing out that speed is the unique selling point of the airplane, he said that conventional low-cost airplanes requiring conventional airports must be very much faster if they are really going to save time over relatively short distances. Many of the low-priced planes still have cruising speeds of only 90 to 95 miles per hour—little if any faster than they were before the war. While there are some four-place machines cruising at 140 to 150 miles per hour, these have \$5000-\$7000 prices making them almost luxury products. "What we would like to see is a four-place 125-130 mile per hour plane selling for \$3500 and so far we have not got it," he stated.

Single Landing Strip—Design developments which would enable the personal plane to use a single landing strip regardless of wind direction would increase its effective door-to-door speed on short trips even more than faster cruising speeds, he emphasized. "It is almost impossible to get the land for close-in conventional airports even in moderate-size cities. A single strip would greatly multiply the number of potential close-in landing sites."

Mr. Burden attributed widespread use of personal aircraft among such groups as the flying farmers to the fact that they do have close-in facilities—right on their own farms. "The only way we can make such facilities for aircraft available to the millions of city dwellers is by developing planes so they can safely and easily use single strips," he said. "To use such strips may require a greater speed range in the conventional airplane as well as special devices for cross wind landings."

Although the CAA is trying to attack this problem by means of contracts with the industry for castored-wheel landing gears, Mr. Burden said that he did not believe there is as much development work being done on this problem as there should be.

Long Way to Go—Naming the helicopter as another possibility in effective time-saving over short distances, he said that an enormous amount of research and development needs to be done on this type of craft before it is ready for the flyer.

"We need a much simpler control system. The

possibility of driving the rotor by ram jets thus eliminating complicated shafting and gearing is most intriguing," he said. "We need constant speed rotors, improvements in stability and control so that present civil approval of operation under contact conditions can be extended to night and instrument conditions. We need de-icing of rotor blades and a greater center of gravity travel to permit loading of passengers, baggage, and fuel in a more rough and ready fashion. Fortunately, military-financed research is going on in this field on a large scale. But it is a field where the possibility of large personal-owner sales is so great and at the same time so far off that it would seem that governmental assistance for development of features of particular interest to civil users is also justified."

Roadable Plane Field—The roadable plane offers an intriguing possibility of reduced cost and increased convenience, and might also benefit from government assistance, since immediate sales prospects are not very great, he said. "If the automobile portion of such a contraption can be made useful enough to make it serve as the second car, or even to be the only car, the potential market for this type of aircraft will be substantially expanded."

For safer flying in bad weather, Mr. Burden stressed the need for increased speed range, stating, "There is nothing which will contribute to safety more than the ability to slow down when the visibility gets poor."

He listed as near-term improvements simplification of engine and other controls; cockpit safety; fireproofing; a stall warning indicator; and simple cure for carburetor icing.

"Something is being done in the way of development in all these fields, but I don't believe that it is enough to reach the goal we should and can reach within a reasonable time," Mr. Burden concluded.

"The real answer to increased personal aircraft sales is an improved product and the real answer to an improved product is increased research and development. The number of companies in the industry which have large enough resources to finance intensive research is small and the declining trend in the market is, illogically enough, likely to discourage rather than encourage an increase in research budgets."

ANC-5 Amendment Available

A number of important revisions have been made to the text of ANC-5 (December 1942 edition) and issued as Amendment 2. Included is a new title page which changes the name of the book to "Strength of Metal Aircraft Elements."

Amendment 2 consists of a set of revision sheets which can readily be inserted in the old book. It supersedes Amendment 1, dated Oct. 22, 1943. Copies of the amendment are now on sale at 25 cents each by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

The basic ANC-5, issued by the Army-Navy-Civil Committee on Aircraft Design Criteria, is on sale for 40 cents a copy.

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W. Averell Harriman, Secretary

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INFORMATION

Seven Statewide Forums

Scheduled by Second Region

Seven statewide "open forum" meetings on problems of non-scheduled and private flying will be sponsored this spring and summer by the second region of the Civil Aeronautics Administration.

The meetings are scheduled as follows: Daytona Beach, Fla., March 26; Birmingham, Ala., April 9; LaGrange, Ga., April 23; Jackson, Miss., May 21; Charlotte, N. C., June 18; Columbia, S. C., July 16; and Nashville, Tenn., August 13.

The meetings will precede the Second Regional Conference which is tentatively planned for Atlanta, Ga., September 16, 17, and 18.

At a similar series of state meetings last year, representatives of the aviation industry made numerous suggestions and recommendations to the CAA, the Weather Bureau and Veterans Administration in connection with nonscheduled operations. At this year's meetings, government agencies will report on progress made in carrying out the suggestions, or on problems encountered in connection with the recommendations.

Carl Clifford, regional chief of Nonscheduled Operations, promised extensive question-and-answer periods at each state meeting, and careful consideration of all new suggestions.

"Last year's meetings were a help to both the industry and the government," Mr. Clifford said. "We're hoping for even more suggestions this year. Every man will have a full chance to air his problems and any ideas he has for improvement."

Student Pilots to Get CAR Test Before First Solo Flight

Before a student pilot will be permitted to take a plane up on his first solo flight, he will have to know his Civil Air Regulations, the Civil Aeronautics Board has ruled.

After April 1 the student pilot must pass the written test on the general operations rules in Part 43 which he should know and the contact flight rules in Part 60 before soloing.

Previously, this test was given before the pilot was allowed to fly his plane out of the local practice area, usually after he had completed his solo time and was ready for the cross-country flight.

The new rule is an amendment to section 43.51.

CAB 1946 Annual Report Issued

The Annual Report of the Civil Aeronautics Board for 1946 has been published and is on sale at 25 cents a copy by the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

CIVIL AERONAUTICS JOURNAL

Civil Plane Output Totals 34,874 Units For Year of 1946

Civil plane production for 1946 was brought to a total of 34,874, valued at \$170,799,937, by December shipments of 1909 planes, surpassing by nearly 75 percent the CAA estimate on total civil plane production for the first full peacetime year.

The 1946 production figures exceed the previous all-time peak year of 1941 by 410 percent. In the prewar year of 1941, only 6,844 civil planes were produced.

Counting both civil and military planes, the year's total was 36,204, valued at \$362,772,192. Military shipments accounted for less than 4 percent of all units shipped, but represented 53 percent of the 1946 total dollar value.

December Output Drops—The 1909 planes, valued at \$6,369,202, shipped to civilian customers in December represent a drop of 36 percent in number and 58 percent in dollar value below November shipments. Despite the sharp over-all decline, shipments of 3- and 4-place planes advanced for the eighth consecutive month.

December shipments to military customers totaled 112 planes with a valuation of \$19,064,158, compared to November's 133 planes (\$13,438,853). The average unit value of military planes shipped in December was \$170,200, compared to an average of \$3300 for civil aircraft.

January 1 Backlog—Unfilled orders on January 1 amounted to 30,014 planes and \$1,128,000,000. Military orders accounted for 2805 of the orders and \$681,000,000 of the dollar value.

The combined value of unfilled orders for both military and civil planes reported by aircraft manufacturers at the end of the year was higher than it was nine months earlier, April 30, 1946. The increase in civil plane backlog resulted from the fact that the growth in transport orders more than offset a sharp reduction in small plane orders.

The tables show civil plane shipments and the dollar value of all plane shipments by months.

Aircraft Production—1946

(Number of Units)

Month	Military total	Civil total	Civil aircraft shipments, by type		
			2-Place	3 & 4-place	Over 4-place
January.....	94	1,227	1,172	15	40
February.....	101	1,252	1,180	24	48
March.....	135	2,019	1,919	50	50
April.....	92	2,327	2,228	51	48
May.....	125	3,073	2,921	80	72
June.....	60	3,431	3,202	178	51
July.....	64	3,388	3,087	271	30
August.....	107	4,698	4,204	467	27
September.....	139	4,090	3,554	497	39
October.....	168	4,500	3,920	553	27
November.....	133	2,960	2,218	709	33
December.....	112	1,909	1,634	861	14
Totals.....	1,330	34,874	30,639	3,756	479

Value of Shipments—1946

Month	Value of civil planes	Value of military planes	Total value
January.....	\$7,826,653	\$13,630,673	\$21,457,326
February.....	12,427,122	11,007,956	23,435,078
March.....	13,666,253	15,922,789	29,589,042
April.....	17,267,250	27,765,612	45,032,862
May.....	24,351,251	20,159,535	44,510,786
June.....	21,053,777	11,371,877	32,425,654
July.....	10,541,325	10,191,425	20,732,750
August.....	12,692,061	9,738,385	22,430,446
September.....	14,730,377	22,324,211	37,054,588
October.....	14,593,797	17,356,781	31,950,578
November.....	15,280,869	13,438,853	28,719,722
December.....	6,369,202	19,064,158	25,433,360
Totals.....	\$170,799,937	\$191,972,255	\$362,772,192

Civil Aviation Highlights

Total civil aircraft production during 1946	34,874
Two-place models	30,639
Three and 4-place models	3,756
Over 4-place models	479
Federal Airways facilities on Jan. 1:	
Airway light beacons (excluding those at fields)	1,865
Rotating beacons	1,789
Flashing beacons	76
Approach light lanes	39
Total radio ranges	414
Adcock ranges	236
Loop ranges	128
Very high frequency ranges	*50
Instrument landing systems	31
Total communications stations	405
Airport traffic control towers	115
Airway traffic control centers	29
Total mileage, all circuits	133,335
Total circuit mileage, weather	61,826
Total circuit mileage, traffic control	71,509
Total drops, all circuits	3,251
Total teletype drops, weather	761
Total teletype and interphone drops, traffic control	2,490
Washington National Airport operations during January:	
Passengers enplaning	32,885
Passengers deplaning	29,959
Aircraft arrivals and departures	11,207
Total registered aircraft on Feb. 1	86,729
Total scheduled air carrier aircraft on Feb. 1	837
Domestic	694
International	143

*12 commissioned; 7 commissioned on experimental basis; 32 completed, awaiting commissioning.

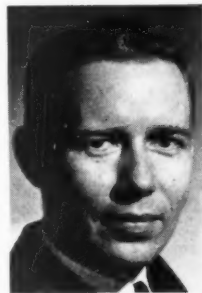
Note—This box each month will present significant information on various important phases of civil aviation.

Metz Transfers to Region 2

As New Communications Head

Henry I. Metz, prominent in development of the CAA instrument landing system, radio markers and automatic flight and radar equipment, has been appointed Superintendent of the Communications Branch in CAA Region 2.

Selection of Mr. Metz for his new position under the national promotion plans fills a vacancy created last year through the death of George C. Hawkins.



Henry I. Metz

He has been with CAA since 1935, being on duty in Washington until 1939, when he transferred to Indianapolis to continue ILS development work at the newly-established Experimental Station. He was Chief of the Experimental Station from 1942 to 1946.

He was coordinator of the demonstration of air navigation aids presented last October at Indianapolis for technicians from 28 nations.

Mr. Metz was graduated from the University of Pittsburgh in 1927 with a B.S. degree in electrical engineering. He was employed by the Westinghouse Radio Division from 1927 to 1935. He is president of the Indianapolis Technical Societies Council, comprising 19 engineering societies, and chairman of the Indianapolis Section of the Institute of Radio Engineers.

U. S. and Canada Consider Lowering Travel Barriers

Minimum customs and immigration restrictions now governing air travel between the United States and Canada may soon be lowered even further following recommendations submitted to both governments by industry-government representatives following a meeting in Washington.

Ask New Laws—The recommendations will be considered by the two countries in the drafting of new laws where international air travel is involved. In the United States the recommendations will be turned over to the subcommittee on Facilitation of International Civil Aviation of the Air Coordinating Committee which will recommend that the committee request the government agencies responsible in these fields to put the recommendations into effect wherever possible by administrative order or where legislation is required to request a bill be prepared for presentation to the Congress.

Recommended Action—These recommendations include the following proposals: Canadian airlines be permitted to use Kinross Field, Sault Ste. Marie, Mich.; nations designate as many airports of entry as possible to facilitate international travel; ferry pilots be permitted to fly by the most direct route to the point of delivery of planes across national boundaries; nations permit duty-free importation of spare parts for aircraft of another nation engaged in international operations;

Also: member nations station inspection personnel at or near the origin of international airlines, so that on arrival at the country of designation, only identification of the passengers shall be necessary and collectors of customs at Juneau, Alaska, and Whitehorse, Canada, shall be given the power to grant or deny permits of entry at undesignated landing places on Alaskan-Canadian flights.

William A. M. Burden, Assistant Secretary of Commerce, is chairman of the United States-Canadian Ad Hoc Committee on Customs and Immigration Problems, and Harry G. Tarrington, Director of the CAA International Activities Service, is acting chairman.

CAB Approves Wien Purchase Of Ferguson Airways Assets

The Civil Aeronautics Board has approved the purchase by Wien Alaska Airlines, Inc., of all stock and assets of Ferguson Airways, Inc., and the transfer to Wien of Ferguson's certificate of public convenience and necessity for operations in Alaska. Wien, operating extensive routes in Alaska, mainly from the terminal points Fairbanks, Fort Yukon and Nome, will operate the routes of Ferguson Airways, which are in the same general area, as a part of its present system. The case was decided on January 31, and the order was signed by the President on February 14.

The Board stated that the purchase of Ferguson by Wien will make possible more frequent and direct service between points on the two airlines, and "that the pattern of operations proposed by Wien would tend to promote safer operations and an improved service, resulting in development of greater traffic potentialities in the area."

The agreement for sale provided that the purchase price of the assets, or of the capital stock, of Ferguson Airways is \$32,300, with \$20,000 payable upon execution of the agreement, and the balance in annual installments of \$5,000 each. The assets to be sold consist of aircraft and parts, all hangars and shops and the equipment, all real estate, and all certificates of public convenience and necessity owned by Ferguson.

Low, Reckless Flying Paid Off in Fatalities, CAB Summary Shows

A wave of reckless, low, and show-off flying, together with student pilots carrying passengers, brought with it a high casualty rate in 1945, the Safety Bureau of the Civil Aeronautics Board reports.

In an analysis of non-air carrier accidents in 1945, the Bureau states that kind of flying caused 41 percent of the 614 fatal and serious accidents, and was primarily responsible for bringing the 1945 casualty ratio above 1944 even though the number of accidents reported, 4652, was lower in proportion to the number of flyers. The number of certificated and student pilots more than doubled during 1945.

113 Percent Casualty Increase—Reckless, low and show-off flying resulted in 192 fatal and serious accidents against 90 in 1944—an increase of 113 percent.

Student pilots carrying passengers were involved in 104 accidents, with 35 fatal and 27 serious. The fatal figure alone exceeded the 32 accidents recorded for this class of flying in 1944.

A total of 7252 persons was involved in the 4652 accidents. Of these, 508 were fatally injured and 446 seriously injured.

In 1944 the accidents reported totaled 3343, with 341 of these fatal or serious.

Spin-stalls Take Highest Toll—As in previous years, more accidents occurred during landing than in any type of maneuver. However, only 1.3 percent of the 1559 landing accidents in 1945 were either fatal or serious, while the 419 spin-stall accidents, sixth on the list in number, took the greatest toll in life and injury.

The 276 deaths and 161 serious injuries in spin-stall accidents accounted for more than one-half of the fatal and about one-third of all the serious injuries. Aircraft damage was high—292 demolished and 110 with at least major assembly damage.

All but 11 of the spin-stall accidents, 408, were charged to pilot error. Structural failure accounted for 3; other personnel, 1; weather, 2; miscellaneous, 2; and undetermined, 3. Reckless flying highlighted 138 of these accidents, with 85 fatal and 35 serious.

Landing Errors—Pilot error was also responsible for 1221 or 78.3 percent of the landing accidents, such as leveling off too high, over-shooting, under-shooting, applying too much brake, etc. Many also occurred because the pilot was not alert to wind direction, weather and traffic conditions, nor careful enough in his selection of landing areas. In many instances the fields were both inadequate and unfamiliar.

Landing gear failures caused 8.8 percent of all the landing accidents, with over half of these laid to improper maintenance. Examples of this faulty maintenance were found in welding; brake repair and adjustment; metal fatigue; unsafetied nuts or bolts, etc.

Forced Landings Second—Second in frequency were forced landing accidents, totaling 950. More than one-third of these accidents were caused by pilot error. Fuel exhaustion due to the pilot's failure to check before take-off or to compute fuel needs for flight; taking off with the fuel valve in "off" position; confusing controls; failure to switch tanks, etc., accounted for 143 accidents, including 11 fatal ones. Accidents caused by carburetor icing totaled 106 and occurred because the pilot failed to apply carburetor heat or else applied it improperly. Faulty application of the throttle caused 65 accidents.

Powerplant Failure Causes 594—Of the 594 accidents attributed primarily to powerplant failure, improper maintenance and servicing contributed to

464 Airports Added to U. S. Total During 1946

A combined total of 4490 civil and military airports were in operation in the United States on January 1—an increase of 464 (12%) over the previous year. A year ago there were 3120 civil airports—there are now 3710, an increase of 19% in the number of fields available primarily to the civilian pilot.

The number of commercially-operated airports increased by 420; municipal airports advanced by 204. Airports operated by the military services dropped from 906 a year ago to 780 on January 1.

The sharp increase in the number of airports used by private planes and feeder transport aircraft shows clearly the interest communities and municipalities have in private flying. Of the 464 airports added, 95% were in Class II or under, which are used primarily by private pilots and small commercial operators. The larger airports (Class IV and over), primarily used by large transport planes, increased from 831 to 851.

The state-by-state record of airports follows:

State-by-State Record of U. S. Airports on January 1

(Data covers existing airports on record with the CAA on Jan. 1, 1947)

State	Total	TYPE OF OPERATION					SIZE CLASSIFICATION ¹					Total lighted
		Com- mer- cial	Muni- cipal	CAA Inter- mediate	Mili- tary ²	All others ³	SUB I ⁴	I	II	III	IV and over	
Total.....	4,490	1,929	1,424	201	780	156	509	1,396	1,249	485	851	1,019
Alabama.....	75	21	16	2	31	5	3	21	18	12	21	29
Arizona.....	104	33	26	10	21	14	6	21	39	12	26	32
Arkansas.....	68	36	15	1	12	4	12	15	18	7	16	9
California.....	356	156	86	11	81	22	30	99	99	28	100	93
Colorado.....	80	33	34	2	8	3	8	25	30	5	12	13
Connecticut.....	25	15	9	1	0	0	1	15	0	4	5	7
Delaware.....	12	8	2	0	2	0	1	3	5	0	3	3
District of Columbia.....	3	0	0	0	2	1	0	0	0	1	2	3
Florida.....	204	29	45	3	124	3	2	31	41	57	73	51
Georgia.....	103	30	26	9	35	3	10	21	21	16	35	40
Idaho.....	67	13	37	4	3	10	11	26	17	6	7	15
Illinois.....	130	76	19	5	21	9	11	42	58	10	9	21
Indiana.....	104	55	19	2	27	1	11	28	42	10	13	18
Iowa.....	104	63	34	4	2	1	18	44	33	3	6	15
Kansas.....	149	58	56	3	29	3	16	64	33	12	24	24
Kentucky.....	23	9	8	2	4	0	0	6	8	4	5	9
Louisiana.....	57	17	18	4	17	1	7	14	15	4	17	23
Maine.....	47	21	20	0	6	0	9	14	5	10	9	18
Maryland.....	39	24	5	1	8	1	3	13	9	5	9	5
Massachusetts.....	60	37	15	0	8	0	17	15	10	6	12	11
Michigan.....	163	52	95	0	11	5	8	75	52	13	15	21
Minnesota.....	75	31	43	1	0	0	10	34	20	4	7	9
Mississippi.....	61	17	23	6	14	1	4	13	15	15	14	19
Missouri.....	99	45	29	8	14	3	12	32	29	14	12	20
Montana.....	95	15	53	12	1	14	16	26	31	9	13	27
Nebraska.....	73	26	29	5	13	0	8	28	16	3	18	16
Nevada.....	46	15	9	9	11	2	4	11	7	6	18	19
New Hampshire.....	23	10	12	0	1	0	5	7	4	4	3	6
New Jersey.....	68	45	9	0	7	2	6	26	21	4	6	11
New Mexico.....	86	29	26	10	13	8	7	22	27	6	24	24
New York.....	199	136	40	4	13	6	54	79	27	20	19	34
North Carolina.....	133	84	23	1	25	0	33	45	19	15	21	16
North Dakota.....	47	11	30	6	0	0	3	18	17	3	6	13
Ohio.....	145	100	31	6	6	2	20	44	59	14	8	25
Oklahoma.....	149	61	50	3	34	1	19	55	40	12	23	28
Oregon.....	86	36	37	5	7	1	8	25	21	12	20	26
Pennsylvania.....	158	108	37	3	8	2	26	73	38	12	9	30
Rhode Island.....	8	4	1	0	0	0	4	0	0	2	2	2
South Carolina.....	61	15	22	2	20	2	6	16	12	6	21	15
South Dakota.....	47	16	25	1	5	0	1	23	13	2	8	6
Tennessee.....	38	12	14	7	4	1	2	4	15	7	10	18
Texas.....	417	172	123	23	88	11	35	162	137	47	96	100
Utah.....	41	6	22	8	3	2	1	10	11	8	11	19
Vermont.....	12	3	9	0	0	0	1	6	1	4	0	4
Virginia.....	81	40	19	3	19	7	7	31	20	8	15	18
Washington.....	112	36	50	3	16	0	13	31	27	8	33	29
West Virginia.....	33	20	10	2	1	0	9	6	11	4	3	7
Wisconsin.....	83	42	38	2	1	0	10	26	35	8	4	11
Wyoming.....	46	8	25	7	1	5	1	11	23	3	8	16

¹ Class I airports are for private owners of smaller type aircraft; Class II, private owners of largest type aircraft and feeder transport aircraft; Class III, present day transport aircraft; Classes IV and over, largest aircraft now in use and those planned for immediate future.

² Indicates Army, Navy, Army operated and Navy operated (latter two are municipal or commercial airports temporarily taken over by Army or Navy).

³ Includes private and miscellaneous government airports.

⁴ Indicates airports which exist but do not come up to Class I standards.

180. Outstanding among these were 78 caused by foreign matter such as dirt, water, particles of solder, paint or lint in the fuel system. Other examples of improper maintenance were found in installations of carburetor air heat attachments; tightening of oil lines; fuel hose connections; installing of defective pistons; overhauling of scored cylinders; installing of incorrect type valve springs, oil fittings; the use of dirty or loose spark plugs; carburetor adjustments; faulty fuel gauges; and broken or deteriorated fuel lines.

While the 589 taxiing accidents were third on the list, none of these was fatal. About 40 percent of the taxiing accidents involved collision—163 with aircraft and 96 with objects such as cars, trucks, buildings, hangars, poles, trees, guy wires, fences,

graders and fuel pumps.

Wires Biggest Obstacle—Collisions with objects caused 527 accidents, killing 142 persons and seriously injuring 105. Breakdown of these collisions shows 218 with wires; 139, trees; 53, ground or water; 37, fences; 19, mountains or hillsides; 18, poles; 11, buildings; and 32, miscellaneous.

Eighty-five of the wire collisions occurred during landing approach and 31 during take-off climb.

Of the 18 collisions with other aircraft, 3 happened when flight paths converged; 3 when attempts were made to cut in on another's approach; 2 when the pilot at higher altitude failed to observe plane ahead and beneath him; and 1 when plane overtook another.

Two of the 15 fire accidents were the result of smoking during flight.

Board Grants Foreign Permits To Two Carriers

Foreign air carrier permits recently were granted to two carriers by the Civil Aeronautics Board—one covering operations between Australia and Vancouver, British Columbia, while the other applies to service between Havana, Cuba, and Key West, Fla.

The Board also renewed the temporary permit of Aeronaves de Mexico and granted the Royal Dutch Air Lines (KLM) permission to amend its route between Curacao, Netherlands West Indies, to Miami.

Permit to Australian Carrier—British Commonwealth Pacific Airlines, Ltd., an Australian carrier, was granted service from Australia to Vancouver, British Columbia, on the Canadian Pacific Coast. Intermediate stops on the route are New Caledonia, the Fiji Islands, Canton Island, Honolulu and San Francisco.

The Board pointed out that Pan American Airways is already certificated to operate between Sydney and San Francisco via various intermediate points.

Air transportation between the United States and Australia is governed by a bilateral agreement drawn up last December. The terms of the agreement allow BCPA rights of transit and non-traffic stops in the United States as well as the right to pick up and discharge international traffic in passengers, cargo and mail in Honolulu and San Francisco.

BCPA expects to conduct three round trips every two weeks between Australia and the United States, using DC-4 aircraft.

Permit to Cuban Carrier—Aerovias "Q", S.A., was granted service between Havana, Cuba, and Key West, Fla., on the basis of reciprocity.

Since the United States and Cuba do not have an air transport agreement, the permit was granted for three years. Provisions in any treaty, convention or agreement made with Cuba during this time will apply to the permit.

Pointing out that four United States air carriers, Pan American, Chicago and Southern, National and Braniff, are authorized to serve Cuba, the CAB said that it is clear that international reciprocity requires that Cuban air carriers be granted the right to serve U. S. points.

Aerovias now operates domestic routes in Cuba and owns five Douglas DC-3 transport aircraft.

Renewed Temporary Permit—The temporary foreign air carrier permit of Aeronaves de Mexico, S. A., was renewed so that this airline may use the airport at Nogales, Ariz., in place of the airport at Nogales, Mexico, on its route from Hermosillo, Mex. The airport at Nogales, Mexico, is unfit for operation of the type of equipment now being used by Aeronaves de Mexico, and the Board, in a previous decision, limited the use of the Nogales, Ariz., airport by Aeronaves de Mexico for a period of 90 days.

The Board's present action extends the temporary permit until the airport on the Mexican side of the border is available for safe and continuous operation with DC-3 type aircraft or, as an alternative, for one year from the effective date of the renewed permit.

KLM's Permit Amended—Royal Dutch Air Lines (KLM) was granted permission to include Ciudad Trujillo, Dominican Republic, as an additional intermediate point on its route from Curacao, Netherlands West Indies, to Miami, Fla.

KLM may serve Ciudad Trujillo as a part of its Curacao-Miami route between the intermediate points Aruba, Netherlands West Indies, and Port-au-Prince, Haiti, instead of serving Ciudad Trujillo on a separate route from Aruba, as it has done previously. The Board felt that this new service would enable KLM "to perform certain of its services more efficiently and more economically than is possible under its present permit."

MARCH 15, 1947

Airways Employees Mark 20 Years of Service



Five CAA veterans in airways work are shown holding the Collier Trophy awarded to the Airways Division, predecessor of the CAA Office of Federal Airways, in 1928. The photograph, taken recently when they each completed a fifth of a century with CAA and its predecessor organizations, shows, left to right: Wesley T. Huntress, George E. Stratton, W. J. Mackenzie, A. J. LaBaie, and Charles I. Stanton.

Five men and one woman rounded out twenty years in airways work in the Civil Aeronautics Administration on February 20.

They are: Charles I. Stanton, Deputy Administrator; Mrs. Abbie Pfeiffer, now in Airways Engineering; Wesley T. Huntress, Chief of the Plans and Drafting Unit; A. J. LaBaie, Deputy Director of Air Navigation Facilities Service; George E. Stratton, Technical Assistant in the same service; and W. J. Mackenzie, Chief of the Aids and Hazards Staff of the Flight Operations Service.

All were on duty in airways when the Aeronautics Branch of the Department of Commerce came into being February 20, 1927. All but Mr. Mackenzie have had 20 years continuous service in the design, installation and operation of airways aids, and he has been away from the CAA only a matter of months in 20 years.

All of them are "youngsters" in the government game compared to Mr. Stratton, who will retire in June after working for the government since 1896. He came to the Commerce Department from the Reclamation Service. The others had been with the government when various agencies such as the Coast and Geodetic Survey, Bureau of Lighthouses, Bureau of Standards, and War Department began to lend their men and apply their knowledge to the new business of providing aids for air navigation.

"We spent our time making up things out of what

we knew about other things," as Mr. LaBaie put it at an informal reunion of the veterans recently. They reminisced about their problems in building airways when there were not even laws backing them up. Mr. LaBaie remembered an oak tree standing in the approach path to an emergency field for which the farmer asked \$100. Had they bought the tree, they would have been required by government regulations to obtain three bids before they could pay as much as \$100. So they leased the land and then cut the tree down to "improve" the land.

The revolving beacon, first of the aids to night flying, posed a problem of equipment that would function in all weather. The question arose whether a steel gear and brass worm, or vice versa, should be used to revolve the lights, and a manufacturing company thought their plastic would do the job. They wired they were sending "one micarta worm" for the purpose. A CAA stenographer referred their wire to the entomology section of Agriculture.

All the veterans are proud of the award of the Collier Trophy in 1928 to Airways Service for its outstanding contribution to aviation.

Mr. Huntress came in as a draftsman, Mr. Stratton, Mr. Mackenzie, Mr. LaBaie and Mr. Stanton as airways engineers, and Mrs. Pfeiffer as a clerk. Among them, they have covered every foot of the 40,000 miles of airways that make up our present system, and have had a hand in the planning and work of installations.

Detroit to New York City Nonstop Service Granted UAL

United Air Lines has been granted nonstop service between Detroit, Mich., and New York City and between Detroit and Allentown, Pa., on route 1, in an opinion issued by the Civil Aeronautics Board.

Elimination of the stop at Youngstown, Ohio, will reduce the current travel time by 17 minutes eastbound and 24 minutes westbound on DC-3 schedules and 35 minutes eastbound and westbound on DC-4 operations.

The Board stated that while the non-stop authorization will allow United a larger share in New York-Detroit business, it does not believe that the traffic diversion from competing carriers will outweigh the public benefits.

Nonscheduled Rules Explained In Civil Aeronautics Manual 42

The new Civil Aeronautics Manual 42, "Nonscheduled Air Carrier Certification and Operation Rules" has been published and placed on sale at 15 cents.

Manual 42, issued by the Civil Aeronautics Administration, interprets and explains the requirements for nonscheduled operations set by the Board in Part 42. For the convenience of the readers, the Part 42 regulations are reprinted in the manual, with the explanatory material immediately following each regulation.

Address requests to the Superintendent of Documents, Government Printing Office, Washington 25, D. C., with accompanying payment in money order or check, or in cash at sender's risk. Stamps are not acceptable.

CAA Instrument Landing System Brings New Flying Techniques

The program for installation of CAA instrument landing systems at 166 airports before January 1, 1949, with the equipment already placed at 36 airports, places growing importance upon knowledge of flight techniques for use of the system by pilots.

These techniques have been outlined clearly by Arthur E. Jenks, Chief of the Airways Flight Inspection Staff, CAA, first region, in a newly issued booklet titled "Flying the Instrument Landing System."

The techniques presented are the result of more than 3,000 hours of VHF test and diagnostic flying with these facilities. Stating that the methods set forth are "my personal recommendations only," he continues:

"As the use of these facilities becomes more widespread, new and better techniques will be developed; but, at least, here we have a start."

The following text is quoted from Mr. Jenks' booklet, produced in limited quantity, for pilots holding instrument ratings.

Flight Technique

The actual piloting technique in flying this system will vary to a certain extent with the instrument procedure. In all cases though, whether the system is flown on a straight-in approach, flown outbound at an initial approach altitude, or the approach course intersected from a "fix", the airplane should be slowed down to its approach speed. The plane's check list should be run through and everything in order for landing before completing the procedure turn, or, in a case of a straight-in approach, the turn into the localizer heading on "final." In approaching the localizer course on "final" from a procedure turn, it is best to start the turn to the localizer heading, when the cross-pointer needle is one dot outside the target circle or "bull's-eye" when approaching at 45 degrees. If a standard turn is started with the needle in this position at approximately ten to twelve miles out from the airport (under average wind conditions), the airplane will be very near "on course" when the localizer heading is reached. However, when within 20 degrees of the localizer heading, a check of the cross-pointer indicator will tell the pilot whether to slow up the turn or speed up the rate of turn, that is the amount of "lead" necessary can only be approximate.

Once the localizer heading is obtained, this heading should be held as accurately as possible and no correction applied until the cross-pointer reaches the edge of the "bull's-eye." The time that the pilot has been on the localizer heading and the time that the cross-pointer reaches the edge of the "bull's-eye," gives the pilot a rough indication of the amount of correction necessary. For example, if it took 30 seconds to drift off the localizer heading to the edge of the circle, we apply a 10-degree, initial correction. On the other hand, if it took one minute to drift off the same amount, we would apply a five or six degree course correction. Course corrections should be applied positive and in definite amounts. Once the new heading is reached, any tendency for the cross-pointer needle to drift further off should be corrected immediately with at least another five degrees of correction. When a correction of greater than ten degrees is used, it should be eased off approximately half, as soon as the needle shows any trend toward "on course." This method, with experience, will allow the pilot to tie down the localizer heading extremely quickly and accurately.

After passing the outer marker, no correction should be made of over five degrees and these should be proportionately reduced in amount as the end of the runway is approached. On the last three miles of approach, the heading will have to be held very carefully and no correction in amounts of more than two degrees applied. *This is extremely important.*

The glide path technique varies with the aircraft

being used. The technique explained here will be that for a DC-3. As most pilots flying this system are familiar with the DC-3, they will readily be able to interpret these data to the type of aircraft they are flying. The airplane should be well slowed down to approach speed, gear down. When coming in at initial approach altitude, as soon as the glide path shows at least one or two dots down from full scale up, one-quarter flap should be applied slowing the airplane to 110 miles per hour. The power settings necessary to hold this speed vary somewhat with the load but in most cases will be found to be between 24 and 26 inches manifold pressure.

As the airplane comes in, underneath the glide path, the needle will move slowly down to "on path." At this point, the power is reduced to keep the needle "on path." Remember, the needle points to the path. If it is up, the airplane is below the path; if it is down, the airplane is above the path. The attitude of the airplane at this point will be found almost consistent with level flight by reference to the artificial horizon. The air speed should be controlled by attitude and the rate of descent or staying on path controlled by the power settings. With the gear down and one-quarter flap and a 2 1/4 degree glide path, the power settings will be found to be from 17 to 19 inches manifold pressure.

This is one of the most critical periods of the entire approach. The pilot is busy holding the localizer heading, attitude, and adjusting power for a uniform rate of descent, staying on the glide path. He is, in reality, flying two courses at once.

Somewhere, previous to intersecting the glide path on the approach, the windshield should be cleared of ice, if present, wiper started and all other items necessary taken care of in order that the transition from instruments to contact may be made as rapidly as possible. Any oscillation of the glide path needle within limits of one dot, either side of the "bull's-eye," should be disregarded once a uniform rate of descent has been attained. If, however, the glide path needle shows "off path" above or below, two dots or more, a check of the "rate of climb" should show a change in the rate of descent and then an adjustment will be necessary on the power settings. Power settings should be changed, however, only after referring to the "rate of climb", once the localizer track and glide path rate of descent have been tied down. All that remains is to go contact the minute the approach lights are definitely in the clear. In the case of an ideal installation, that is, runways 7000 feet or more, and an emergency, the airplane can very easily be flown all the way on to the runway. If this system is used to extremely low limits, the best procedure found, so far, is for the pilot to stay on instruments throughout the entire landing. The co-pilot uses whatever contact reference is available, approach light lane, etc., and dumps the elevators sufficiently to hold the airplane on the ground once contact with the runway is made. The pilot closes the throttles and uses the brakes and rudder as necessary to hold the gyro heading until the airplane is definitely under ground control. This is only recommended as emergency procedure and when you are assured of practically zero drift (no wind).

ILS Do's and Don'ts

DON'T attempt to fly the back course of a localizer if it is published as "Not to be used." The reason for this is that in certain installations, it has been necessary to "screen" off reflections from interfering objects adjacent to the transmitter and in so doing

a good portion of the radiated energy toward the back course is deflected, resulting in a poor or altogether unflyable back course. In other cases, there are terrain hazards on the back course.

DO use the back course, if there are no restrictions, as an aid to your ordinary instrument approach, that is, if the back course lines up with your approach. An excellent example of the use of a back course is at LaGuardia Field and making an approach from the northeast to land on runway No. 22. Under ordinary conditions this approach has caused considerable profanity because in daylight and one-mile visibility, coming up on the field over open water, there is nothing you can pick up until you see the field itself. The range course is 500-700 feet wide at this point and even when you are holding a tight "on course", you still may not be lined up exactly with the runway, necessitating ten or fifteen degrees of turn at low altitude. Flying the ILS back course, inbound, under these conditions, takes out all the guess-work and you pick up the runway on the extended centerline. It is also easier to fly the back course than to fly an "ADF track" under the same conditions.

DON'T become anxious if the localizer needle oscillates momentarily. It is usually caused by a "departure" while you are on the approach. As the "departure" passes directly over the transmitter on take-off, it will cause your cross-pointer to oscillate. This only lasts for a second or two and the needle returns to its previous indication.

DON'T use the localizer for guidance on the runway during an instrument or low visibility take-off. Use the directional gyro.

DO turn the receivers on at least 10 or 15 minutes before starting an approach. This enables them to warm up and stabilize.

DON'T get the idea that the ILS markers are "snafu" when you are in a "close in holding stack," that is above the ILS approach. In all probability several of the marker patterns will blend at altitudes above 1500 feet causing continuous light indication. The marker output levels are set to give you the correct indication on the final approach and there is no known way of preventing the signal from reaching the higher levels.

DON'T forget that the wind direction and velocity will have a direct effect on the rate of descent, when you are on the glide path. A head wind slows up the rate of descent and a tail wind increases the rate of descent. Consequently, any data on power settings can only be approximate.

DO hold the attitude precisely when on the glide path and make "path" corrections with power settings, but Don't forget that any appreciable change in power settings will result in a change in attitude unless the trim is corrected also.

DON'T fly the localizer needle. Hold your heading with the gyro. The localizer needle tells you what to do, to correct the gyro heading.

DON'T get any fixed impression of the rate of descent on a glide path. The actual path angle is controlled and set from the ground and in most cases the setting is 2.5°. In certain ILS it may be found a few tenths-of-a-degree higher or lower. Remember that the path angle is constant, but the instrument approach speed of different type aircraft, and the wind direction and velocity are variables affecting the rate of descent. The path angle is so set that the airplane will safely clear all obstructions by a comfortable margin if the needle is anywhere on the dial between the "bull's-eye" and full scale "fly up."

DON'T pay any attention to glide path needle indications until you are on final approach. The reason is that the glide path operates on frequencies that have all the characteristics of radar and on the outbound heading the glide path antenna is in the "shadow" of the airplane itself and does not receive a true signal. However, at the completion of the procedure turn, or the turn into the localizer

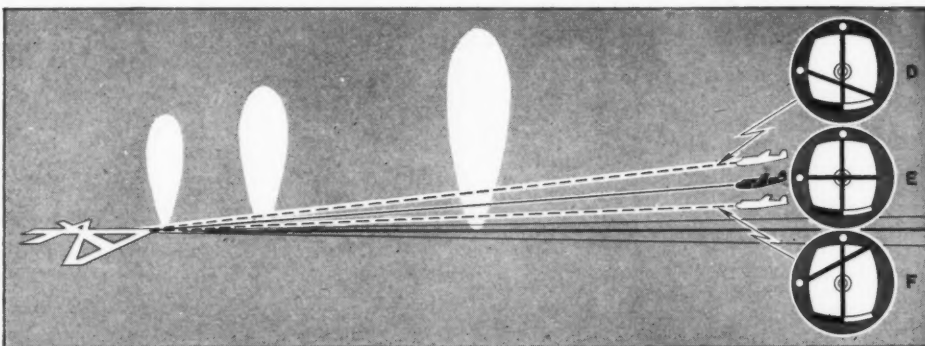
heading on final, the antenna is "in the clear" and the pointer will operate correctly.

DON'T change the flap setting when on the glide path. An increase in setting will "balloon" the airplane above the path and a decrease will cause the airplane to sink below the path.

Pointer Sensing, So-called

It has been found by experience that if the pilot will disregard anything he has learned about flying the needle indication, in terms of "sensing," he will be less likely to be confused when something goes "sour" or he gets into a tight weather jam. For example, the AAF Instrument Flying Manual states that when flying toward the localizer on the approach heading you fly "to the needle" and when flying away from the localizer on the outbound heading you fly "away from the needle." This is entirely correct but what a good many pilots do not know is this: Suppose you are making a localizer approach and for some reason have to pull up. You are told to make your pull up on the "back course" to a specified altitude and to return over the station at this altitude. When over the station on the return, you will be given further clearance for another approach. When you pass the transmitter and are outbound on the back course, does the sensing reverse? It does not. The blue hemisphere is still on your right and the yellow on your left, the same as when you were inbound on the approach course. You make your turn and fly back toward the transmitter (inbound on the back course). The color hemispheres are still in the same place—all you have done is turn the airplane around and, this includes yourself and the cross-pointer. The blue hemisphere that was on your right before is now on your left; the yellow hemisphere that was previously on your left is now on your right. Know where your colors are in respect to the course and you will have no trouble. The course is the vertical plane that separates the blue from the yellow and if you are in the blue there is only one way you can get to the course and that is, turn toward the yellow irrespective of whether you are flying inbound or outbound. It is the same as a low frequency range—you can't fly the "on course" unless you know whether the "A" is on your right or left.

Another reason for the emphasis on "know your colors" is that in flying VHF on the airways, the use of "sensing" would lead to much confusion. For example, in flying the New York-Chicago Airway, using the VAR ranges and the term "sensing", a pilot flying from New York to Chicago would fly "toward the needle" while a pilot going from Chicago to New York would fly "away from the needle." On the omni-directional ranges, a pilot flying any heading toward the station and using the omni-azimuth indicator correctly will fly "toward the needle" inbound and "away from the needle" outbound. It is much simpler to "know your colors" than to try and use a rule of thumb as would be necessary with the so-called "sensing" method.

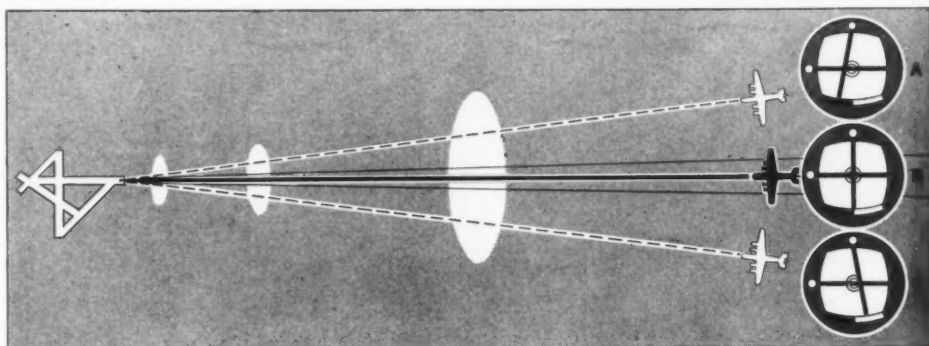


ILS GLIDE PATH—When the horizontal needle of the cross-pointer instrument is in position "D", the pilot knows he is above the glide path in making an approach for a landing. Position "E" indicates the plane is on the glide path and "F" shows it is below the path.

Efforts to Aid Planes in Bad-weather Landings Focus Attention on CAA Equipment in Operation

Development of means for landing airplanes by instruments in bad weather has been recognized during many years as a prime problem confronting civil aviation.

Recognizing the need for an instrument landing system as far back as 1928, when aeronautical radio as a whole was relatively undeveloped, the United States predecessor of the Civil Aeronautics Administration began work on the problem with the cooperation of the Bureau of



ILS LOCALIZER BEAM—The solid black line indicates the center of the instrument runway. "A" shows position of the vertical needle on the cross-pointer indicator when the plane is to the right of the runway center line in making an approach. "B" shows how the cross-pointer on the instrument panel appears to a pilot when he is on course. "C" shows the needle position when the plane is to the left. The white areas indicate positions of the boundary, middle and outer markers.

Standards. That work has progressed through the years, being represented now by the CAA instrument landing system which is being installed throughout the United States.

It should be emphasized, in this connection, that no single type of navigational aid will solve all the complex problems of modern instrument navigation and traffic control.

The CAA instrument landing system consists of a localizer beam and glide path indicator, in addition to the marker beacons and runway lights.

ILS Ground Equipment—The localizer beam, marking the center of the instrument runway, is transmitted in the 108-110 megacycle band.

A vertical needle on the cross-pointer instrument in the airplane enables the pilot to use the beam in landing. The needle's position shows him when he is to the left or right of the runway center and when he is on the center—the "bull's-eye".

The useful range of the localizer beam is at least 25 miles away from the airport at altitudes as low as 2000 feet.

A glide path beam, projected from a second transmitter gives the pilot a descent course down to the runway that will safely clear all obstructions on the approach path.

The horizontal needle on the cross-pointer shows the pilot when he is on the glide path. When the

horizontal needle is below the bull's-eye, the plane is above the glide path and vice versa. The pilot will intercept the glide path signal beyond the outer marker, generally at 1500 feet above airport elevation.

A series of markers, which show up on the instrument panel as flashing lights, enable the pilot to determine his exact distance from the runway. The standard marker system consists of a boundary marker (white light) located at the field boundary; a middle marker (amber light) located about 3500 feet from the approach end of the runway, and an outer marker (purple light) located about three to four miles from the middle marker.

The localizer transmitter is housed in a low building as far back from the end of the ILS runway as possible to keep it from obstructing take-offs and landings. The glide path transmitter is about 1000 feet in from the approach end and off to the side about 400 feet.

Airborne Equipment—The aircraft is equipped with two receivers, one for the localizer (later to be combined with range receivers), and the other for the glide path signals. The pilot controls both receivers through a single control head.

The control head is marked with the letters "UVWXYZ" representing the six localizer channels, and the pilot selects the localizer channel he wants by setting the tap switch at one of the letters. This automatically selects the proper glide path also.

The receivers operate with automatic gain control since the visual signal must have constant output throughout its entire range. However, a small volume control located on the control head permits the pilot to adjust the voice or identification signals coming over the localizer to his individual ear comfort.

The output of both of these receivers is fed to the cross-pointer instrument mentioned above. The blue and yellow segments at the bottom of the cross-pointer mark either side of the center line of the approach course.

With both receivers turned off the needles on the cross-pointer will center themselves over the target circle or bull's-eye in the center. With both receivers in operation but no signal being received (ground test), the vertical needle will remain centered, and the horizontal needle will go to "full up" position. The new type of cross-pointer indicator, (See ILS Equipment, page 33)

Descended into Mountain—In its investigation of the American Airlines' crash into Thing Mountain, Calif., March 3, 1946, the Board could find no reason for the plane's descent of over 3000 feet into an overcast from its 8000-foot cruising altitude. It struck the ridge at 4870 feet.

The Board concluded, however, after examining possibility of icing, downdrafts and plane trouble, that the pilot probably was responsible for the descent.

The flight was cleared at El Paso to cruise at 8000 feet to San Diego, and reported at that altitude over El Centro, Calif., 39 miles from the mountain.

The flight had contact weather until it neared the steeply rising ridge where ceilings were lowering rapidly, and were probably zero-zero at the time of the accident. It appears, the Board said, that the pilot or co-pilot was attempting to descend from El Centro while en route to San Diego in accordance with contact flight rules.

The Board found no evidence that the pilot was attempting to avoid the area. Had the pilot been having trouble with either equipment or downdrafts as he approached the mountain, he would have turned to the south or to the east toward lower terrain and more favorable weather conditions.

The 22 passengers and the crew of 3 were fatally injured. The plane was demolished by impact and fire.

Aerobatics Too Severe—Loss of the left wing in a plane piloted by Robert G. Bensing near Wabaunsee, Kans., Aug. 18, 1946, probably was caused by excessive air loads imposed by severe aerobatics, the Board concluded after investigating the accident.

Pilot Bensing, 22, parachuted to safety, but his passenger, Waldo Eugene Grimes, 22, who did not have a parachute, was killed. Both were from Manhattan, Kans.

Bensing stated that he executed a series of gliding turns from 5000 feet, advancing the throttle fully at the conclusion and regaining the altitude lost, which he estimated was 500 feet. Following the second series of these maneuvers he noted that the air speed was only slightly more than 130 mph. He had just pulled out of the dive and was starting upward when the wing failed.

Witnesses on the ground differed with the pilot and indicated by testimony that his maneuvers were far more violent than those he described. According to one witness, the engine sound lasted longer and increased more rapidly and to greater intensity than any he had ever heard. He stated that the noise then changed to the "steady drone of an airplane climbing," sounding as if the plane first entered a "steep dive followed rather quickly by a steep climb."

Laboratory examination indicated sub-standard gluing of failed parts. The Board expressed the belief, however, that this condition would not have caused the failure had the aircraft been kept within its placarded speeds.

The day before the accident the owner flew it aerobatically, executing slow rolls, half rolls and spins, and stated that "everything was perfectly normal."

Caught in Electrical Storm—Winnie Lee Jones, 25, of Ballinger, Tex., was killed when she crashed April 22, 1946, in mountainous terrain 35 miles southeast of Ft. Stockton, Texas, during adverse weather and darkness. The plane was certificated for day, contact flight only. Miss Jones, a former WASP, was certificated as a commercial pilot and had flown approximately 350 hours, mostly in aircraft of the type involved. She was not rated as an instrument pilot and had flown only 5 hours at night.

At the request of Mr. Bales, her employer, Miss Jones reluctantly took off from Presidio, Tex., in the face of approaching darkness and threatening

weather, to fly a 1000-lb. load of perishable cargo to San Angelo, Tex. The cargo was loaded into the rear cockpit and caused the allowable gross weight of the aircraft to be exceeded by approximately 650 lbs. Arrival in San Angelo was estimated at approximately one hour and forty-five minutes after official sunset. When the plane was about an hour overdue a telephone check of West Texas Airports was made and the following morning aircraft from Army and civilian airports started searching. About 48 hours later the wreckage was found.

Investigation disclosed that the plane had apparently dived nose-first to the ground at a nearly vertical angle and high speed, disintegrating upon impact. Ranchers living in the area, who heard the plane crash but did not know what it was, stated that at the time the worst thunder and electrical storm they had experienced in years was in progress. Official weather reports from Presidio and Ft. Stockton for the approximate time of the accident indicate that weather closed in all around that area. It was established that the aircraft had on board sufficient fuel for approximately three hours of flight. The accident occurred about two hours and ten minutes after take-off and practically on course from Presidio to San Angelo. No evidence was found that Pilot Jones had landed anywhere en route; however, she was approximately one hour behind normal flight time, having progressed but 135 miles in slightly over two hours.

Crashes on Ferrying Trip—Aaron H. Mullinax, 24, of Greenville, S. C., was killed in an accident near Lenna, Okla., March 14, 1946. The aircraft had been purchased from Army surplus at Albuquerque, N. Mex., and was being flown on a ferry permit to Greenville where it was to have been modified for certification by the Civil Aeronautics Administration. Mullinax was certificated as a commercial pilot and held an instrument rating.

After refueling at Oklahoma City, Mullinax took off with Fort Smith, Ark., as his next intended stop. When the airplane was several hours overdue and unreported, a search was started and on March 21 the wreckage was located on a wooded hilltop near Lenna, Okla., approximately 100 miles from Oklahoma City. There were no known eyewitnesses to the accident and residents in the vicinity were unaware that an accident had occurred until after the wreckage had been spotted from the air.

Evidence indicated that the plane had either spun or dived into the ground at a very steep angle. Examination of the wreckage disclosed no evidence of mechanical failure or malfunctioning of the aircraft prior to impact and all parts were accounted for at the scene.

Sideslipped from 70° Bank—Student Pilot Vernon Henry Janzen, 24, was fatally injured in an aircraft accident which occurred near Lyons, Kans. The plane was demolished. Janzen's flying time consisted of 50 minutes solo, 9 hours and 55 minutes dual.

Janzen took off solo from the Lyons Municipal Airport. After two practice landings he left the airport area and was next observed circling in the vicinity of his father-in-law's home. He made two gently banked 360° turns, then entered a steeper turn of an estimated 70° bank, from which the plane sideslipped to the ground.

Fatal Aerobatic Maneuver—At an estimated altitude of 400 feet, George Thomas Boyd, Jr., of Modesto, Calif., was killed while attempting a snaproll during which the plane stalled and fell near Colusa, Calif. Weather conditions were good and investigation did not disclose evidence of malfunctioning or failure of the aircraft.

Injured in Crash—Herbert Henne, of Kennewick, Wash., was injured April 2, 1946, when he crashed following take-off from the Kennewick Airport. Henne, 31, a private pilot with approximately 225 solo hours, operated a flying service at the Kennewick Airport.

Following repair of a faulty switch wire and considerable block testing, during which mechanics checked the rpm with magnetos both advanced and retarded, Henne taxied to the southwest end of the field and ran up the engine several times. He then made a normal take-off toward the northeast into a 10-mph wind. Mechanics and pilots observing the take-off stated that when the plane passed the hangar the engine was running smoothly but sluggishly, as though the magnetos were retarded. Shortly thereafter the engine slowed to idling and the aircraft descended in what appeared to observers to be an attempt by the pilot to force it back on the ground. However, the end of the field was near and the pilot started a power-off, steeply banked climbing turn to the left. When about 90° of the turn had been completed, and at an altitude of approximately 50 feet, the plane stalled, fell off to the left and crashed.

Pilot Henne stated that the engine ran normally when he checked it at the end of the field but that the tachometer was quite erratic; that as the plane became airborne the tachometer swung violently two or three times, then settled to an indication of 5, whereupon he closed the throttle and cut the switches. The magneto retard control was found jammed in the retarded position.

A 20-foot drop at the end of the field and obstructions straight ahead of the runway induced a turn when a landing could not be made within the field boundary.

Killed in Air Show Stunting—Charles Joseph Petersdorf, 22, of Cape Girardeau, Mo., and his brother-in-law, Henry William Becker, 14, of University City, Mo., were killed when they crashed in the Mississippi River near Cape Girardeau June 30, 1946. Petersdorf, the pilot, held a private certificate and had flown approximately 52 hours.

Mr. Petersdorf, an ex-paratrooper, was pilot of one of three planes participating in a combined speed boat regatta and air show at Cape Girardeau. Prior to take-off he had discussed with another pilot maneuvers to be performed and they had agreed to take off at one-minute intervals, fly over the bridge along the Illinois shore at 2500 feet and then execute either two loops and a spin or two spins and a loop, as preferred. After this they were to fly north over Cape Rock and back to the airport. Upon reaching the area of the races, Pilot Petersdorf, accompanied by Passenger Becker in the rear seat, executed several aerobatic maneuvers at about 1500 feet. It appears that the last maneuver was a stall at approximately 1000 feet, following which the plane entered a 45° dive that continued into the river.

Pilot Petersdorf had just recently completed his GI flight training and at the time of the accident was not connected with any GI training program.

Glider Passengers Escape—Pilot John R. Taylor and his passenger, Elliott White Springs, escaped uninjured when the glider in which they were being towed by Sidney B. Mahaffey, of Lancaster, S. C., and Leroy Springs II, of Fort Mill, S. C., crashed at Lancaster. The powered craft stalled during a shallow turn and crashed. Its occupants were killed. Civil Aeronautics Board investigators reported the differential between maximum safe glider speed and minimum flight speed for the towing craft was only five miles per hour. The differential is based on the specifications fixed by the manufacturers of the respective crafts involved.

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board. Both offices are located in the Department of Commerce Building, Washington 25, D. C.

Administration

Urge Simpler Rules for U. S.-Canada Air Travel. (Feb. 3)

CAA Issues 3-Year Plan for Building or Improving 4,431 Airports. (Feb. 9) (Release is free; detailed list of airports is on sale by Superintendent of Documents, G. P. O., Washington 25, D. C., at 25 cents.)

CAA Adds Five New Chapters to Flight Information Manual. (Feb. 10)

CAA Asks Plane Owners to Assist in Use Survey. (Feb. 23)

Veteran CAA Airways Employees Complete Two Decades of Service. (Feb. 24)

Address by William A. M. Burden, Assistant Secretary of Commerce, entitled, "The Engineer's Part in Civil Aviation Expansion." (Jan. 30)

Address by William A. M. Burden, Assistant Secretary of Commerce, entitled, "Air Navigation Facilities." (Feb. 4)

Address by D. M. Stuart, Chief of Technical Development Service, entitled, "Radio Aids to Air Navigation." (Jan. 30)

Board

Caribbean-Atlantic Mail Rate. (Jan. 30)
Statistics—Mileage & traffic for first 10 months of 1946. (Feb. 5)

Australia receives foreign air carrier permit. (Feb. 7)

Statistics—Financial for first 10 months of 1946. (Feb. 10)

Cuban airline receives foreign air carrier permit. (Feb. 11)

Statistics—Mileage & traffic for first 11 months of 1946. (Feb. 14)

KLM given additional stop. (Feb. 18)
Alaskan airlines merge. (Feb. 18)

Temporary permit of Aeronaes de Mexico renewed. (Feb. 19)

Detroit-New York, Detroit-Allentown nonstop service. (Feb. 20)

Evans Score With Teacher

John E. Sims, CAA educationist in Region 2, lightened a recent report with an account of a small triumph in teacher discipline he observed at an aviation operations institute held in St. Petersburg, Fla., to acquaint school principals with the workings of aviation.

Featured on the program for the forty-five school principals attending the institute was a flight in a Beechcraft furnished by U. S. Airlines, and the pilot was helping some of the lady principals board the plane. As one elderly, gray-haired lady principal started aboard, he grasped her arm, turned her around, grinned and said, "O-ho! My old sixth grade teacher!" She fluttered a little and said, "Well bless my soul, if it isn't little Johnny!" "Yes ma'am!" the pilot replied. "I've been waiting 15 years for this! Now, you just get right up there, and take your seat and be quiet!" (She made two flights.)

Correction

The regional aviation clinic scheduled for March 19-20 under sponsorship of CAA and state officials will be held in Region 3 instead of Region 2 as erroneously reported in the head to the announcement of the meeting on page 14 of the February 15 issue of the CAA Journal.

MARCH 15, 1947

Air Regulations . . . on March 1, 1917

TITLE	No.	PART			MANUAL		
		Price	Date	No. of Amendments	Price	Date	No. of Amendments
Aircraft							
Airworthiness Certificates.....	01	\$0.05	10/15/42	2	None	None	
Type and Production Certificates.....	02	.05	7/1/46	1	\$0.10	8/1/46	
Airplane Airworthiness—Normal, Utility, Aerobatic, and Restricted Purpose Categories.....	03 ¹	Free	11/13/45	1	None	None	
Airplane Airworthiness.....	04a	.15	11/1/43	6	.45	7/1/44	2
Airplane Airworthiness Transport Categories.....	04b ¹	Free	11/9/45	3	None	None	
Rotorcraft Airworthiness.....	06	.10	5/24/46		None	None	
Aircraft Airworthiness, Limited Category.....	09	.05	11/21/46		None	None	
Engine Airworthiness.....	13	.05	8/1/41		None	None	
Propeller Airworthiness.....	14	.05	7/15/42	1	.15	5/1/46	
Equipment Airworthiness.....	15	.05	5/31/46		No stock	7/1/38	
Radio Equipment Airworthiness.....	16	.05	2/13/41		Free	2/13/41	1
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments.....	18	.05	9/1/42		.50	6/1/43	
Airmen							
Pilot Certificates.....	20	.05	7/1/45	5	None	None	
Airline Pilot Rating.....	21	.05	10/1/42	3	None	None	
Lighter-than-air Pilot Certificates.....	22	.05	10/15/42	2	None	None	
Mechanic Certificates.....	24	.05	7/1/43	1 ¹	None	None	
Parachute Technician Certificates.....	25	.05	12/15/43	3	None	None	
Traffic Control Tower Operator Certificates.....	26	.05	10/10/45	1	None	None	
Aircraft Dispatcher Certificates.....	27	.05	7/1/46		None	None	
Physical Standards for Airmen.....	29	.05	1/10/46		None	None	
Flight Engineer Certificates.....	35	Free	3/15/47	1	None	None	
Operation Rules							
Air Carrier Operating Certification.....	40	.10	7/10/46	3	None	None	
Scheduled Air Carrier Operations Outside Continental U. S.....	41	.05	5/1/46	4 ¹	None	None	
Nonscheduled Air Carrier Certification and Operation Rules.....	42	.05	8/1/46	5 ¹	.15	11/1/46	
General Operation Rules.....	43	.05	7/1/45	8 ¹	None	None	
Foreign Air Carrier Regulations.....	44	.05	7/1/45	1	None	None	
Transportation of Explosives and other Dangerous Articles.....	49	.05	7/1/45		None	None	
Air Agencies							
Airman Agency Certificates.....	50	.05	4/30/46		.15	5/15/46	
Ground Instructor Rating.....	51	.05	12/15/43	1	None	None	
Repair Station Rating.....	52	.05	10/1/42		Free	2/41	
Mechanic School Rating.....	53	.05	8/1/42	1	Free	5/40	
Parachute Loft Certificates and Ratings.....	54	.05	1/21/43		None	None	
Air Navigation							
Air Traffic Rules.....	60	.05	8/1/45	2 ¹	.15	10/45	
Scheduled Air Carrier Rules.....	61	.10	8/1/46	3 ¹	None	None	
Miscellaneous							
Rules of Practice Governing Suspension and Revocation Proceedings.....	97	Free	1/1/47	1	None	None	
Definitions.....	98	.05	10/15/42		None	None	
Mode of Citation.....	99	Free	11/15/40		None	None	
Regulations of the Administrator							
Aircraft Registration Certificates.....	501	Free	3/31/43		None	None	
Recordation of Aircraft Ownership.....	503	Free	3/31/43		None	None	
Notice of Construction or Alteration of Structures on or near Civil Airways.....	525	Free	7/23/43		None	None	
Seizure of Aircraft.....	531	Free	12/8/41		None	None	
Reproduction and Dissemination of Current Examination Materials.....	532	Free	1/15/43		None	None	

¹ Certain aircraft may comply with the provisions of this part or Part 04A. ² Special regulations 340, 340A and 340B. ³ Special regulations 361A, 361B. ⁴ Special Regulation 385. ⁵ 43-1, 43-3, 43-5 are obsolete. ⁶ Special regulations 361A, 361B, 385.

Note: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk. Amendments and free Parts are obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.; free Manuals and Regulations of the Administrator from the CAA Office of Aviation Information, Dept. of Commerce, Washington 25, D. C.

ILS Equipment

(Continued from page 31)

however, is equipped with a flag alarm so that any time the proper amount of operating signal of either localizer or glide path is not received, a tiny flag appears with the letters OFF.

Cross-pointer "Air Space"—The movement of these two needles throughout their entire range is uniform in respect to the angular sweep over the instrument. Actually, there is a great difference between the two of them in the interpretation of actual air space.

To illustrate, when both needles are centered on an approach, the pilot has a track (localizer) and a hill or incline (glide path). Full linear movement of the localizer needle and a six-degree localizer course, at ten miles from the transmitter, gives the

pilot actually a wedge of air space that is 5500 feet wide at that point. The glide path course is much sharper than the localizer course and ranges from 1 to 1.5 degrees total width "full up" to "full down" on the instrument. What this means to the pilot, then, is that ten miles from the transmitter he has a block of air that is 1380 feet high and 5500 feet wide and he is endeavoring to find the exact center by keeping both needles on the bull's-eye.

These distances are quoted here to give the pilot a fair idea of the physical dimensions, in cross-pointer terms, of the air space in which he can maneuver in on his approach to the end of the runway. Another interpretation is to consider the bull's-eye as the ON COURSE, any movement between the bull's-eye and the stop pin as the "twilight" area, and if the needles are against the stop pin that the airplane is OFF COURSE.

Airline Orders

E-245 denies application of All American Aviation for temporary exemption from 401(a) of the Act so that the carrier could serve Buffalo, N. Y., as a terminal point on its route between Pittsburgh, Pa., and Jamestown, N. Y. (Jan. 22)

E-246 permits Delta Air Lines to begin nonstop service between Atlanta, Ga., and Jacksonville, Fla. (Jan. 23)

E-247 authorizes Pan American to serve Montego Bay, Jamaica, as intermediate point between Glenfuegos, Cuba, and Kingston, Jamaica, on its Miami-Bahia route; and Chicago and Southern to serve Montego Bay as an intermediate point between Havana, Cuba, and Kingston, Jamaica, on its New Orleans-Houston to San Juan, Puerto Rico and Caracas, Venezuela, route—issued with opinion. (Jan. 17)

E-248 sets Northwest's temporary rate of mail pay after Sept. 1, 1946, at 85 cents per U. S. mail ton mile for transpacific operations. (Jan. 23)

E-249 permits Braniff temporary service to Nuevo Laredo, Mexico, as a co-terminal with Laredo, Tex., until carrier can begin service to Mexico City. (Jan. 23)

E-250 denies City of Zanesville, Ohio, leave to file supplemental exceptions to examiner's report on the Great Lakes Area Case. (Jan. 23)

E-251 permits Pan American to operate flights between points in Erie and points east of London without stopping at London by temporary exemption from 401(a) of the Act. (Jan. 27)

E-252 grants Northeast leave to file a substitute answer in the matter of mail compensation. (Jan. 27)

E-253 dismisses application of British Overseas Airways for amendment of foreign air carrier permit at request of the carrier. (Jan. 27)

E-254 permits Wisconsin Central Airlines to intervene in the Chicago-Seattle Case. (Jan. 28)

E-255 denies Pan American's motion that its application for service between Los Angeles, San Francisco and Seattle (docket 1803) be consolidated with the new hearing of Western's application for San Francisco-Seattle service in the reopened West Coast Case; that record be reopened to include portions of docket 1803; and that Pan Am be permitted to intervene in reopened proceedings. (Jan. 27)

E-256, E-257, and E-258 approve agreements relating to ticket agencies and exchange orders between American Airlines, American Overseas Airlines and Aerovias Braniff, S. A.; American Airlines and Aerovias de Mexico, S. A.; and Mid-Continent Airlines and Aerovias Braniff, S. A., respectively. (Jan. 28)

E-259 docket for hearing and further action agreement made Sept. 8, 1945, between TWA and Ethiopia for the organization and operation of Ethiopian Air Lines. (Jan. 28)

E-260 grants TWA's motion to withhold from public disclosure information contained in TWA-Ethiopian agreement (docket 2778). (Jan. 28)

E-261 directs Chicago and Southern to show why the Board should not fix the carrier's temporary base rate of mail pay over its Latin American route at 50 cents per airplane mile until adequate experience and operating data have been accumulated to provide a sound and reliable basis for determining the final rate. (Jan. 28)

E-262 directs Caribbean-Atlantic Airlines to show cause why the Board should not set carrier's final mail pay at base rate of 19.50 cents per revenue plane mile in accordance with findings and conclusions given in accompanying statement. (Jan. 27)

E-263 and E-264 approve agreements relating to ticket agency and exchange orders between Eastern Air Lines and Expreso Aereo Interamericano, S. A.; and between Eastern and KLM (Royal Dutch Air Lines) and KLM (Royal Netherlands Indies Airways), respectively. (Jan. 30)

E-265 denies motion of National Airlines to strike certain portions of the Eastern Air Lines' brief in the Boston-New York-Atlanta-New Orleans Case. (Jan. 30)

E-266 permits Chicago and Southern to serve Beaumont-Port Arthur, Tex., through use of Jefferson County Airport. (Jan. 31)

E-267 permits Monarch Air Lines to begin service on Feb. 1 to Montrose-Delta, Colo., through use of Montrose Municipal Airport. (Jan. 31)

E-268 grants Delta Air Lines and National Airlines leave to intervene in the Additional Service to Florida Case. (Jan. 31)

E-269 extends approval of U. S. air carrier participation in the traffic conferences of the International Air Transport Association for one year to Feb. 28, 1948. (Jan. 31)

E-270 grants TACA's request to begin service to Miami, Fla., on Feb. 1, through use of the 36th Street Airport. (Feb. 3)

E-271 grants Pan American's request that the oral testimony and exhibits relating to the activities of the China National Aviation Corp., presented in its mail rate proceedings, be withheld from public disclosure. (Feb. 3)

E-272 rules that Caribbean-Atlantic Airlines must file its answer to the Board's show cause order in the matter of the carrier's mail pay rate (E-262) before it can accept a motion that the tentative rates be established as a provisional and immediate basis of payment. (Feb. 4)

E-273 permits Southwest Airways Company to suspend service temporarily at Fort Bragg, Calif., on route 76. (Feb. 4)

E-274 dismisses at carrier's request amended application of Southwest Airways Company and certain individuals filed with the Board in docket 1491 for approval of certain interlocking relationships. (Feb. 4)

E-275, E-276, E-277 and E-278 direct each of the four airlines American, Eastern, Pennsylvania-Central and United to appear at a public hearing before a Board examiner and show cause why the use of the Canton-Akron Memorial Airport for the purpose of serving Akron, Ohio, should not be disapproved. (Feb. 5)

E-279 consolidates the show cause proceedings involving American, Eastern, PCA and United (orders E-275 to E-278 above) into docket 2332. (Feb. 5)

E-280 authorizes Pan American to serve Johannesburg, Union of South Africa, through use of Palmfontein Airport. (Feb. 6)

E-281 permits Beeline Van Lines Co. and the Freight Forwarders Institute to intervene in the Freight Forwarder Case. (Feb. 5)

E-282 directs Pioneer Air Lines to show cause why the Board should not fix carrier's temporary rate of mail pay at 35 cents per airplane mile over its entire system beginning Aug. 1, 1945. (Feb. 5)

E-283 directs All American Aviation to show cause why the

Board should not set its final rate of mail pay at (a) 48.46 cents per airplane mile without reference to base mileage for the period, May 28, 1945, to Aug. 31, 1946; (b) at 46.77 cents per airplane mile after Sept. 1, 1946, to be applied to the mileage flown on a maximum schedule of two daily round trips over the entire route—issued with statement. (Feb. 6)

E-284 issues foreign air carrier permit to Australian carrier, British Commonwealth Pacific Airlines, Ltd., for route between a terminal point in Australia, intermediate points New Caledonia, Fiji Islands, Canton Island, Honolulu, T. H., and San Francisco, Calif., and the terminal point Vancouver, British Columbia—issued with opinion. (Jan. 24)

E-285 rescinds order E-226 allowing Southwest Airways to suspend service at Marysville, Calif. (Feb. 6)

E-286 permits Far Eastern Air Transport to intervene in the Philippine Air Lines Case. (Feb. 7)

E-287 authorizes Pan American to begin service to Montego Bay, Jamaica, February 12, through use of Montego Bay Government Airport. (Feb. 7)

E-288 permits Memphis, Tenn., the Memphis Chamber of Commerce, Laurel, Greenville, Jackson, and Hattiesburg, Miss., the Chambers of Commerce of Alexandria, La., and Brownsville, Tex., to intervene in the Mississippi Valley Case. (Feb. 7)

E-289 orders investigation of recent agreement between the Hughes Tool Company and TWA to determine if this arrangement or other aeronautics activities of Hughes Tool since 1944 result in an acquisition of control of TWA requiring Board approval. (Feb. 7)

E-290 grants foreign air carrier permit for 3-year period to Aerovias "O", S. A., for route between Havana, Cuba, and Key West, Fla.—issued with opinion. (Jan. 29)

E-291 denies petitions of PCA, Seas Shipping Company, and United Nations Airships for rehearing, reargument and reconsideration of the Board's order and opinion in the South Atlantic Case. (Feb. 14)

E-292 authorizes Pioneer Air Lines to suspend service temporarily at Ranger-Eastland-Cisco, Tex., and Plainview, Tex., on route 64. (Feb. 13)

E-293 rescinds Board's order of March 18, 1946, requiring preservation of certain accounts, records and memoranda of Eastern Air Lines. (Feb. 14)

E-294 consolidates 13 additional applications into the Freight Forwarder Case. (Feb. 14)

E-295 orders an investigation of the rates, fares and charges of 16 of the domestic air carriers for transportation of passengers and property. (Feb. 13)

E-296 approves resolutions adopted by the Second Middle East Traffic Conference of IATA. (Feb. 4)

E-297 approves resolutions adopted by the First Middle East Traffic Conference of IATA. (Feb. 4)

E-298 permits City of Springfield, Mo., to intervene in Mississippi Valley Case. (Feb. 17)

E-299 dismisses upon applicant's request, applications of Challenger Airlines for certificates of public convenience and necessity. (Feb. 17)

E-300 dismisses application for certificate of public convenience and necessity of Richard S. Leghorn upon applicant's request. (Feb. 17)

E-301 dismisses applications of Pennsylvania Air Freight Co. for a certificate as a freight forwarder upon applicant's request. (Feb. 17)

E-302 dismisses certificate application of American Air Export and Import Co. upon applicant's request. (Feb. 17)

E-303 dismisses Colonial Airlines' application for a temporary exemption order. (Feb. 17)

E-304 consolidates applications for service in the Caribbean area of Caribbean-Atlantic Airlines (docket 2246), Pan American (docket 2170) and Chicago and Southern (docket 2084) after severing certain portions from Caribbean's and Pan Am's applications and assigning them new docket numbers. (Feb. 17)

E-305 amends foreign air carrier permit of Royal Dutch Air Lines (KLM) for service between Willemstad, Curacao, N. W. I., and Miami, to include stop at Ciudad Trujillo, Dominican Republic—issued with opinion. (Jan. 23)

E-306 approves purchase by Wien Alaska Airlines of all stock and assets of Ferguson Airways, and the transfer to Wien Alaska Airlines of the certificate of public convenience and necessity held by Ferguson Airways—issued with opinion. (Jan. 31)

E-307 sets Monarch Air Lines' temporary rate of mail pay at the base rate of 35 cents an airplane mile from Nov. 27, 1946, date carrier began its feeder line operations in the Colorado area. (Feb. 17)

E-308 disapproves resolution 50 of the Third Meeting of the European Traffic Conference of IATA, evidencing agreement CAB No. 766 R 50. (Feb. 4)

E-309 permits Columbus Chamber of Commerce and City of Columbus to intervene in agreement proceeding between TWA and Delta (docket 2346) relating to interchange of equipment. (Feb. 18)

E-310 denies motion of Philippine Air Lines that its application for service to the United States be consolidated with that of Far Eastern Air Transport. (Feb. 18)

E-311 extends temporary foreign air carrier permit of Aerovias de Mexico, S. A., for route between Hermosillo, Mex., and Nogales, Ariz., until adequate airport facilities are available at Nogales, Mex.—issued with opinion. (Feb. 6)

E-312 grants United Air Lines right to conduct nonstop services over route 1 between Detroit, Mich., and New York City and between Detroit and Allentown, Pa.—issued with opinion. (Feb. 13)

E-313 denies request of Mid-Continent that Board hold in status quo the financial expenditures and commitments and contractual obligations of the three new carriers, Iowa Airplane Co., Parks Air Transport and Wisconsin Airline, for airline purposes, pending Board determination of Mid-Continent's petition for reconsideration of the North Central Case decided Dec. 19, 1946. (Feb. 19)

E-314 grants Minot Association of Commerce leave to intervene in docket 628—Mid-Continent's application for certificate amendment. (Feb. 19)

Airman Orders

Suspensions

S-45 suspends for 60 days private pilot certificate of Richard Warren Lamb. He flew at altitudes of 200 to 300 feet over airport buildings and people at Lemmon, S. Dak.; failed to conform

to the flow of traffic on take-off, and performed aerobatics consisting of an abrupt pull-up and steep climbing turn to right so as to endanger air traffic. (Jan. 17)

SD 107 suspends for three months commercial certificate of Edward L. Pietrowski. While carrying passengers near Lombard, Ill., he performed aerobatic maneuvers without parachute equipment, violating 43.409. (Dec. 27, 1946)

SD 113 suspends commercial certificate of Donald Eugene Zeiner for six months. While Zeiner operated an aircraft in a careless, reckless manner and flew below 500 feet near Verona, Ore., examiner cited defendant's apology and statement that he would never repeat the incident as tempering factors. (Jan. 17)

SD 117 suspends for 30 days private pilot certificate of Jack Walton Gabbert. He carried a passenger on a flight when he had not made at least five take-offs and landings in the same type or class of aircraft within the preceding 90 days (43.680), and permitted aerobatic flight without parachute equipment (43.409) (Jan. 9)

SD 122 suspends for six months commercial certificate of John Brian Stapler. On two successive flights Stapler flew at less than 1000 feet over Tulsa, Okla.—60.105(a); carried passenger in single engine craft when he held only a multi-engine land rating—43.63; and flew in a careless, reckless manner. (Jan. 25)

SD 123 suspends for six months commercial certificate of Robert M. McAnaney for flying too low over Bennington College, Bennington, Vt. (Jan. 25)

SD 124 suspends for three months commercial certificate of Neil Bertram Fulb for low flying over Champaign, Ill. (Feb. 1)

SD 125 suspends student certificate of Hughes Wilson Vaughn after finding that circumstances warranted departure from the usual Board policy of revoking a certificate when a student pilot carries a passenger. (Jan. 28)

SD 128 suspends for 60 days student certificate of William Kenneth Tate. In accompanying as a passenger another student pilot, Carl E. Tate, on a flight near Zanesville, Ohio, he contributed to Carl Tate's violation of 43.50. This action the CAB examiner found, was inconsistent with public interest and safety. (Feb. 13)

SD 129 suspends for six months commercial certificate of Thomas Clinton Mullins, Jr., former Army pilot who flew B-24's on 65 combat missions. While carrying a passenger he flew at an altitude so low near Battleground, Ind., that he struck telephone wires. (Feb. 4)

SD 130 suspends for six months student certificate of Lawrence Edus Gibson for carrying a passenger at Fresno, Calif. Gibson's age, 45, and the fact that his wife was the passenger were taken into consideration in imposing the suspension rather than the usual revocation for violation of 43.50. (Feb. 4)

SD 131 suspends for three months student certificate of Warren Arthur Ward for piloting a multi-engine aircraft when his student certificate had been endorsed only for single engine aircraft—43.53. (Dec. 27, 1946)

SD 134 suspends for four months commercial certificate of George John Serb. In addition to breaking the 1000-foot altitude rule, he flew aerobatically over Bay Village and near Parkside Drive and Lake Road, Ohio, by diving from altitudes between 300 and 200 feet to within 100 feet of the ground. (Jan. 13)

SD 138 suspends for six months student certificate of Donald LeRoy Weaver. He flew outside the local area designated by his instructor when he did not have ten solo hours, had not passed the written test, and his certificate had not been properly endorsed by his flight instructor, all in violation of 43.52. He also flew in a careless manner—60.101. (Jan. 7)

SD 139 suspends for 30 days commercial certificate of Roger Eugene Gustafson upon finding that his violation of 60.105(a) was more technical than substantial. Although he flew at 450 feet above Champaign, Ill., he was also within a block of open country and had sufficient altitude to make a safe emergency landing. (Feb. 8)

SD 140 suspends for three months commercial certificate of Richard L. Callahan for low flying over Champaign and Urbana, Ill. He also dived to within 150 feet of a group of sorority houses. Callahan admitted that he flew low, but denied reckless, careless flight. He stated that very little of the 15-minute flight was spent over the city. (Feb. 4)

SD 143 suspends private certificate of Roger Wayne Zentz for six months for flying over Fort Worth, Tex., at less than 1000 feet—60.105(a), and performing aerobatics over city—60.104. (Feb. 17)

Revocations

S 47 revokes private pilot certificate of Charles Seymour Liggett for breaking the altitude minimum of 1000 feet for flight over congested residential areas—60.105(a); and careless, reckless operation—60.101. He flew over Wichita, Kans., houses at tree-top level and flew over a group of people in their backyard at a 200-foot altitude. (Jan. 23)

S 52 revokes student certificate of Mathias Philip Schwerdt. While piloting an aircraft belonging to another he performed about 12 loops at altitudes from 800 to 150 feet above the ground—60.101; landed the plane on a farm and took-off with a passenger aboard—43.50; and flew the aircraft to Galesville, Wis., where he flew at less than 300 feet over a congested area—60.101 and 60.105(a). (Feb. 6)

S 54 revokes commercial certificate of George Lowell Newton. He flew over Summerville Beach, Irondequoit, N. Y., at 10 to 30 feet and performed aerobatics, piloting the aircraft in an inverted position over persons on the beach and diving to between 10 and 30 feet from the ground. (Feb. 7)

S 58 revokes student pilot certificate of John Fred Streit for carrying a passenger on a flight near Leavenworth, Kans., in violation of 43.50. (Feb. 19)

SD 119 revokes student certificate of Carl Elden Tate for carrying passenger on flight near Zanesville, Ohio. (Jan. 7)

SD 120 revokes student certificate of Edwin Rawles Worrell. He carried a passenger on a flight near Whalesville, Va.—43.50; piloted aircraft outside of local flying area when he had not passed written examination on contact flight rules and flight instructor had not endorsed certificate—43.52(b) and (c); flew over group of road workers at about 100 feet—60.105(b); and stalled the aircraft causing it to crash, thus flying recklessly and carelessly; executed aerobatics without parachutes—43.409. (Jan. 3)

SD 121 revokes student certificate of Alexander James Kurzewicz for repeatedly flying over Kearney, N. J., at house-top level, causing many people to go into the street from fear that he would crash into their homes. (Jan. 24)

SD-126 revokes student certificate of Alies Andrew Swierz for flying at less than 500 feet near Dowagiac, Mich., and endangering persons and property and operating aircraft in a careless and reckless manner. Swierz was fined 10 dollars by a Michigan Justice of the Peace Court for reckless flying in this instance. (Jan. 31)

SD-127 revokes student pilot certificate of Joseph Milan Jaksick for carrying a passenger—43.50; piloting the aircraft with a passenger when he had less than 10 solo hours and did not have his certificate appropriately endorsed by a flight instructor—43.52(a) and (c). (Jan. 6)

SD-135 revokes until April 12, 1947 student pilot certificate of Gregory A. Dalao. While piloting an aircraft over Municipal Airport, Ponca City, Okla., he flew so low that he struck and damaged a radio antenna suspended between two hangars at an altitude of about 63 feet and endangered five workmen who were retooling the hangars—60.105(b); he also failed to make all turns to the left while still within the traffic pattern after take-off—60.106(b). Dalao has been "grounded" since the violations April 12, 1946, by the Spartan School of Aeronautics where he is enrolled as a student. (Feb. 4)

SD-136 revokes private pilot certificate of Raymond Walter Lewis. He piloted an aircraft with a passenger at less than 500 feet above the ground near a farm home at Fairbluff, N. C., and crashed on the barn thus endangering persons and property on the ground contrary to 60.105(b). (Feb. 4)

SD-137 revokes private pilot certificate of Clarence English Hill upon finding that he piloted an aircraft near a drive-in theater in the east side of Kansas City at tree-top level and below the top of the theater screen—60.105(a); and on another occasion he performed spins and loops over the same place without parachutes while carrying a passenger—43.409 and 60.104(b). On the second flight he flew so low he barely missed hedge rows a couple of times and a truck another time—60.105(a). (Feb. 4)

SD-141 revokes student certificate of John W. Biggs until Oct. 18, 1947, since he turned in his certificate to the Board last Oct. 18. Biggs flew at less than 150 feet over residences at Edgeley, Pa.—60.105(a) and (b); performed steep pull-ups over the homes—60.104(b); and flew outside his local flying area when he had not passed the written examination and his certificate was not endorsed by his flight instructor—43.52(b) and (c). (Feb. 11)

SD-144 revokes commercial certificate of Vernie Francis Larson. Accompanied by his brother as a passenger and flying a rented plane, he dived at a small boat on the Mississippi river near La Crosse, Wis., to such a low altitude that he struck a tree bordering on the river and damaged the right wing of the plane. Examiner found that he violated 60.105(b) and 60.101. (Feb. 15)

Miscellaneous

S-46 grants Administrator leave to withdraw complaint against William Luke Elder, holder of mechanic certificate with A & E ratings. (Jan. 17)

S-48 grants Administrator's motion to withdraw complaint against Jack Kurtz upon finding that defendant voluntarily delivered student pilot certificate to Administrator for cancellation. (Jan. 27)

S-49 modifies previous revocation order by allowing William Rodger Putnam to be issued a pilot certificate after Jan. 30, 1947. (Jan. 30)

S-50 denies petition of Francis M. Reeves for a waiver of 20.560(c) allowing former military pilots to apply for a pilot certificate within 12 months after their release from military service. (Feb. 4)

S-51 dismisses Administrator's complaint against George W. Clay after examining evidence disclosed at a hearing and finding that acts alleged in complaint were not established. (Feb. 6)

S-53 sets aside the examiner's initial decision and grants Carroll Robert Canning, private pilot, a hearing. (Feb. 6)

S-55 denies Administrator's motion to vacate the Board order (4353) dismissing complaint against Victor R. Evans, airline transport pilot. (Feb. 11)

S-56 denies Administrator's motion to vacate the Board's order (4354) dismissing complaint against J. Richard Lyons, holder of commercial certificate with flight instructor rating. (Feb. 11)

S-57 terminates proceedings against James Calvin McKenzie, private pilot. The Administrator accepted a sum of money in compromise of a civil penalty. (Feb. 12)

SD-114 ends proceedings against Harold D. Wolcott, holder of mechanic certificate with A&E rating, upon finding that Wolcott's violation of 18.50 was inadvertent. (Jan. 20)

SD-115 ends proceedings against Otis E. Huebner, holder of mechanic certificate, upon finding that Huebner's violation of 18.6 was not serious and was committed without willful intent. (Jan. 11)

SD-116 ends proceedings against Ralph Orval Beattie, Jr., holder of mechanic certificate with A&E ratings. (Jan. 10)

SD-118 ends proceedings against Exton Hickey Jones, holder of mechanic certificate with A&E rating. (Jan. 20)

SD-132 dismisses complaint against Francis Walton, commercial pilot, upon finding that alleged acts were not established. (Dec. 31, 1946)

SD-135 dismisses complaint against Ray Grant Milliman, commercial pilot, on grounds that acts alleged in complaint were not established. (Jan. 14)

SD-142 dismisses complaint against William Henry Kempf since his student pilot certificate expired last August 30, and he does not hold any type of airman certificate. (Jan. 10)

SD-145 dismisses complaint against Edward Hart Biggs, Jr., commercial pilot, on grounds that acts alleged in complaint were not established. (Dec. 19, 1946)

Regulations

Amdt. 01-2 Effective Jan. 31, 1947

1. Delete from 01.10 the words "and furnished."
2. Delete from 01.11 the words "and furnished."
3. Delete from 01.12 the words "and issued."
4. Delete from 01.25 the words "and furnished."

(These changes permit the manufacturer to reproduce the "Application," "Statement of Conformity," Aircraft Operation Record," and "Periodic Aircraft Inspection Report" forms used in applying for airworthiness certification. Previously the Civil Aeronautics Administration was required to furnish or issue the forms.)

Amdt. 02-1 Effective Jan. 31, 1947

02.34 is amended by deleting the words "and furnished." (This amendment allows the manufacturer to reproduce the form specified in Part 20 for use in preparing the Statement of

Conformity. Previously, the manufacturer was required to get this form from the Civil Aeronautics Administration.)

Amdt. 03-1 Effective March 15, 1947

Amend 03.0421 to read as follows:
03.0421 Flight tests. (Applicable to all airplanes certificated as a type on or after March 15, 1947.) After proof of compliance with the structural requirements contained in this part, and upon completion of all necessary inspection and testing on the ground, and proof of the conformity of the airplane with the type design, and upon receipt from the applicant of a report of flight tests conducted by him, there shall be conducted such official flight tests as the Administrator finds necessary to determine compliance with §§ 03.1 through 03.632. After the conclusion of these flight tests such additional flight tests shall be conducted as the Administrator finds necessary to ascertain whether there is reasonable assurance that the airplane, its components, and equipment are reliable and function properly. The extent of such additional flight tests shall depend upon the complexity of the airplane, the number and nature of new design features, and the record of previous tests and experience for the particular airplane model, its components, and equipment. If practicable, the flight tests performed for the purpose of ascertaining the reliability and proper functioning shall be conducted on the same airplane which was used in flight tests to show compliance with §§ 03.1 through 03.632.

Amdt. 04a-6 Effective March 15, 1947

Amend Part 04a by: (1) Deleting second sentence of 04a.04. (2) Adding new section 04a.040 which has the same wording as Amdt. 03-1 above with the exception that planes in this category must show compliance with sections 04a.2 through 04a.91.

Amdt. 04b-3 Effective March 15, 1947

Amend section 04b.0321 of Part 04b to read the same as Amdt. 03-1 above with the exception that planes in this category (transport) must show compliance with sections 04b.1 through 04b.622.

Amdt. 20-5 Effective April 1, 1947

Repeal of 43.52(b) (see Amdt. 43-8 below) has made reference to this section in Part 20 incorrect, therefore 20.24 is amended to read as follows:

20.24 Aeronautical knowledge. Applicant for a powered aircraft or glider rating shall have passed the written examination prescribed in § 43.51 (a) within the preceding 24 calendar months.

Amdt. 43-8 Effective April 1, 1947

1. Amend 43.51 as follows:
43.51 Requirements for first solo. A student pilot shall not operate an aircraft in solo flight until:

- (a) he has passed a written examination on pertinent provisions of Part 43 and those of Part 60 dealing with contact flight rules;
- (b) he has been found competent by a flight instructor to make such flight and authority therefor has been endorsed by such instructor on the student pilot certificate; and
- (c) he has been given instruction in recovery from stalls and spins, if such solo flight is made in a spinnable aircraft.

2. Delete paragraph (b) of 43.52.
(This amendment to Part 43 of the Civil Air Regulations will require the student pilot to pass the written examination on pertinent provisions of Part 43 and contact flight rules in Part 60 before making any solo flight. Previously the pilot had to pass this examination before making a solo flight outside the local flying area designated by his instructor.)

Amdt. 22-2 Effective Feb. 4, 1947

These changes to Part 22 rescind the periodic endorsement requirement for lighter-than-air pilot certificates, provide for reinstatement, and put into effect the same recent experience and medical rules which now apply to other airmen.

1. Amend 20.21 Duration, as follows:

- (a) A student lighter-than-air pilot certificate shall expire 24 calendar months after the month of issuance.
- (b) A private or commercial lighter-than-air pilot certificate or free balloon pilot certificate shall remain in effect unless it is suspended, or revoked, or a general termination date for such certificate is fixed by the Board.
- (c) The Administrator or his authorized representative may issue a temporary lighter-than-air pilot certificate for a period of not to exceed 90 days subject to the terms and conditions specified therein by the Administrator.

2. Amend 22.22, Periodic endorsement requirements, as follows:

22.22 Recent experience requirements
22.220 General. (a) A student who has not piloted an airship within 90 days shall not pilot such aircraft in solo flight until he has passed a flight check given by a commercial lighter-than-air pilot and that fact has been endorsed by such pilot in the student pilot logbook.

(b) The holder of a private or commercial lighter-than-air pilot certificate shall not pilot an airship carrying passengers, unless within the preceding 90 days he has had at least 5 take-offs and landings.

22.221 Night flight. No person shall pilot a lighter-than-air aircraft carrying passengers during the period from one hour after sunset to one hour before sunrise, unless he has made at least 5 take-offs and landings to a full stop during the hours of darkness within the preceding 90 days.

22.222 Instrument flight. A pilot shall not pilot an airship under instrument flight rules, unless he has had at least 6 hours of instrument flight under actual or simulated instrument conditions during the preceding 6 calendar months. At least 50 percent of the above required time must have been accomplished in actual flight.

3. Amend 22.23, Special issuance of expired certificates, as follows:

22.23 Reinstatement. A private or commercial lighter-than-air pilot certificate or a free balloon pilot certificate which was effective on or after January 1, 1942, and has expired, may be reinstated upon application to an authorized representative of the Administrator prior to February 1, 1948.

22.314 Medical certificate and renewal. Any person while piloting a lighter-than-air aircraft shall have on his person a medical certificate or other evidence satisfactory to the Administrator showing that he has met the physical requirements within the following time limits:

- (a) student pilot, private pilot, or free balloon pilot—24 calendar months,
- (b) commercial pilot—12 calendar months.

Aeronautical Charts Listed

A list of the current aeronautical charts published by the U. S. Coast and Geodetic Survey is presented here. Lithographed in colors, these charts provide aeronautical information relating to radio ranges, airports, intermediate fields, beacon lights, other aids, and obstructions to navigation. Details on those subjects are over-printed in red upon base maps showing streams, principal highways, railroads, cities and towns. Vertical relief, shown by contours at 1000-foot intervals, is emphasized by gradient tints and spot elevations.

Orders for aeronautical charts should be addressed to the Director, U. S. Coast and Geodetic Survey, Washington 25, D. C., with payment accompanying the order. A discount of one third is allowed on orders amounting to ten dollars or more.

Sectional Charts (87 sections) scale 1:500,000. 25¢ each.
World Aeronautical Charts, scale 1:1,000,000. 41 charts of the United States and 16 charts of Alaska. 25¢ each.

Instrument Approach and Landing Charts, scale 1:31,680 on the landing side, and scale 1:250,000 on the approach side. Approximately 500 charts of the series covering the principal air fields of the United States. 5¢ each.

Flight Charts, scale 1:1,000,000. 37 charts of the principal airways of the United States and 16 charts of Alaska. 25¢ each.

Direction Finding Charts (6 sections) scale 1:2,000,000. 40¢ each.

Local Aeronautical Charts, scale 1:250,000, for selected city areas. 25¢ each.

Planning Charts, scale 1:5,000,000, United States and Alaska. 40¢ each.

Aircraft Position Charts (Charts 3071 and 3072) scale 1:5,000,000, for long range overseas operations. 10¢ each.

Auxiliary Charts (various scales) providing special aeronautical information of the United States. Prices varying from 10¢ to \$1.00.

Airport Obstruction Plans, scale 1:12,000, show runways and obstructions for principal airports of the United States. Program in progress. 30 maps published on Oct. 1, 1946, and 553 maps in production or scheduled for production. 40¢ each.

The Coast and Geodetic Survey makes distribution of the various series of unclassified aeronautical charts published by the War and Navy Departments during the war period, including the series listed as follows:

World Planning Charts, scale 1:5,000,000 (43 charts) providing world coverage. 40¢ each.

V-70 Naval Aviation Charts, 70 nautical miles to one inch, (17 sections). 40¢ each.

Long Range Air Navigation Charts, scale 1:3,000,000 (78 charts). 40¢ each.

V-30 Naval Aviation Charts, 30 nautical miles to one inch, (104 charts). 30¢ each.

World Aeronautical Charts (approximately 900 charts) covering all the land areas of the world, scale 1:1,000,000. 25¢ each.

Flight Charts, principal airways of the world, scale 1:1,000,000. 25¢ each.

Special Charts (various scales) selected areas of the world. 40¢ each.

Pilot's Handbooks (also separate charts from books), for special foreign operational areas. Distributed on the basis of 5¢ for each chart.

Amdt. 35-1 Effective March 15, 1947

Add new section 35.110 as follows:

35.110 Temporary certificates. The Administrator or his authorized representative may issue a temporary flight engineer certificate for a period of not to exceed 90 days, subject to the terms and conditions specified therein by the Administrator.

Amdt. 44-1 Effective March 1, 1947

Part 44, Foreign Air Carrier Regulations, is amended as follows:

44.3 Aircraft airworthiness. Each air carrier aircraft shall be possessed of a currently effective certificate of airworthiness issued by the country whose nationality it possesses. The air carrier shall not operate any airplane within the United States at weights in excess of the maximum weights authorized by the country of origin of the airplane model involved.

Amdt. 41-4 Effective Feb. 21, 1947

Change 41.432 in "Scheduled Air Carrier Operations Outside Continental U. S.," to read as follows:
41.432 Approach and landing limitations. No instrument approach procedure shall be executed or landing made at an airport when the latest U. S. Weather Bureau weather report for that airport indicates the ceiling or visibility to be less than that prescribed by the Administrator for landing at such airport.

Amdt. 97-1 Effective March 1, 1947

Immediately following section 97.18 of Part 97 add new section 97.18a as follows:

97.18a Withdrawal of Complaint. A complaint may be withdrawn by the Administrator of Civil Aeronautics, as plaintiff, at any time prior to the issuance of an initial decision in the proceeding as provided for in sections 97.22 and 97.23 hereof, by filing with the Board an original and two copies of a formal Notice of Withdrawal of Complaint stating the reasons for such action, together with a signed statement that a copy thereof has been mailed to the defendant, and the proceeding shall thereupon be deemed terminated without further action of the Board.

CAB Circulates Proposed Changes Of Parts 24 and 53

Proposed revisions of the Civil Air Regulations relating to the certification of mechanics and to mechanic schools are being circulated for comment by the Safety Bureau of the Civil Aeronautics Board.

Six Ratings Proposed—Under the proposed revisions of Part 24 (Mechanic Certificates), a mechanic certificate would include one or more of the following ratings: airframe; power plant; aircraft inspector; propellers; instruments; and radio.

The term "airframe" has been chosen, the Safety Bureau explains, because it applies to the aircraft without its power plant and more clearly defines the component which it covers. The term "power plant" applies to the aircraft engine and its related components, and includes such types of power units as jet and turbo as well as the reciprocating type.

Aircraft Inspector Rating—Establishment of the proposed "aircraft inspector" rating would permit the holder of that rating to return aircraft to service after major repair or overhaul and also to make the annual inspection of aircraft required by Part 43 of the CAR. Under the present CAR, a certificated mechanic is not authorized to return aircraft to service after major repair or overhaul.

Oral and practical examinations for all ratings would be confined to the particular type of airframe or power plant with which the applicant is familiar.

Privileges and limitations for all ratings are clearly set forth because of the large variety of airplane and power plant types now in use.

The proposed revisions will permit a mechanic to overhaul airframes or power plants, as indicated by his rating, without regard to size or horsepower. This is not a relaxation of repair requirements, the Safety Bureau explains, because a limitations section has been included to prohibit a mechanic from undertaking repairs with which he has not had previous experience or knowledge. Such a provision limits the mechanic to the work he is qualified to perform, without restricting the possible scope of his work.

The new ratings would provide for the specialized skill required in the repair or overhaul of propellers, instruments and radio. The Safety Bureau points out that mechanics making such repairs are specialists who are not particularly concerned with the details of airframe and power plant repair work and who, therefore, should not be required to qualify in the latter capacities.

Broader Curricula Proposed—The proposed revisions of Part 53 (Mechanic School Rating) would broaden curricula in mechanic schools, enabling such schools to include courses conforming with the ratings contemplated under revision of Part 24.

Such schools could arrange their curricula so as to provide students with any desired combination of courses. The minimum number of hours of instruction would be increased, however, because operating experience indicates that the schools are unable to provide sufficient instruction in the time previously specified.

A student could receive a transcript of credit for completion of a portion of an approved curriculum at the end of a specific phase in the course. That revision of Part 53 would enable the student to use the transcript in transferring from one school to another. Also, the transcript would be accepted as evidence of a specific amount of training which would be considered as aeronautics experience within the meaning of the proposed Part 24.

In connection with the proposed revisions of Part 24 now being circulated, the Safety Bureau states that they include most of the suggestions received through an earlier circularization.

CAA Safety Poster Depicts Dangerous Practice

DON'T CROWD CLOUDS



FLY RIGHT AND LIVE TO FLY

DEPARTMENT OF COMMERCE, CIVIL AERONAUTICS ADMINISTRATION

The "little fellow," shown blissfully skimming along close to the clouds from which the transport plane is emerging, doesn't know that his foolhardy action has invited a collision and catastrophe. This poster is the second of a series being issued by CAA as warnings against dangerous flying practices. Airports throughout the United States display the posters, which are distributed by the CAA Office of Aviation Information.

Wartime Aircraft Production Data Offered in CAA Book

An official wartime record of aircraft production for the years 1940-45 is available in a CAA publication to public libraries and research organizations.

This 204-page book entitled "U. S. Military Aircraft Acceptances 1940-45," gives aircraft, engine and propeller production figures by month, and by manufacturer for the war period.

The material in this report is a result of the activities of the Aircraft Resources Control Office, organized during World War II to coordinate the aircraft procurement and production responsibilities of

numerous government agencies.

With the end of hostilities, the activities of ARCO were terminated, and its records, together with a small segment of its personnel, were transferred to the CAA Office of Aviation Information.

The historical importance of this wartime data, which constitutes an official record of aircraft production during the war years, has prompted its publication. Copies of this report are available from the Office of Aviation Information, Civil Aeronautics Administration, Washington 25, D. C.

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